ORGANIZATIONAL, INTERMEDIATE, AND DEPOT MAINTENANCE

DESCRIPTION AND PRINCIPLES OF OPERATION

A/P22P-20 CREW BACKPACK ASSEMBLY

PART NO. 3516AS2000-1

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Reference Material

Aviation-Crew Systems Manual, Oxygen Systems (Aircraft Equipment Masks and Other Systems) . . . NAVAIR 13-1-6.4-1
Organizational, Intermediate and Depot Maintenance, Illustrated Parts Breakdown,
A/P22P-20 Crew Backpack Assembly . . . . . WP 028 06

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Record of Applicable Technical Directives

None

1. DESCRIPTION.

2. GENERAL.

a. Emergency Egress Backpack Assembly (crew backpack) is designated A/P22P-20, and was developed for use in the E-2C aircraft. It is installed in the aircrew seats. The backpack contains three major components: Parachute Assembly, Seat Survival Kit Assembly, and Emergency Oxygen System Assembly (Figure 1).

b. The crew backpack is installed on the aircrew seat parachute support pad. The lap belt fittings are secured in place by the seat retaining pins. During emergency egress or removal of the crew backpack for maintenance, the crew backpack lap belt fittings are released from the retaining pin cavities and inertia reel by means of actuating the emergency equipment release handle located on the right side of the seat bucket.

c. The crew backpack measures approximately, 15-in. wide, 8-in. thick, 25-in. in length, and weights approximately 43 lbs.

3. CONFIGURATION.

a. The crew backpack container is constructed of 1000 Denier Cordura material.

b. The upper compartment houses the vacuum sealed canopy, Soft Link Assembly (risers), drogue parachute assembly, pilot parachute assembly, and the Model 2400 Automatic Actuation Device (AAD). The canopy assembly is a maneuverable, tri-vent, circular parachute, 26 foot in diameter, constructed of low porosity nylon material consisting of 24-Gores, (multi-colored: white, olive green, international orange and sand shade).

c. The lower compartment houses the survival kit SRU-41/P22-20 subassembly, which consists of a vacuum sealed LRU-29/P22P-20 one man life raft assembly made up of a LRU-16 life raft and FLU-10 CO2 bottle assembly. The LRU-29/P22P-20 life raft assembly is vacuum sealed and is inflated by a manual pull of the Beaded Handle. The survival kit SRU-41/ P22P-20 houses the SRU-31A/P survival kit pocket and an emergency oxygen assembly. The emergency oxygen system assembly contains a removable 50 cubic inch emergency oxygen bottle. Refer to NAVAIR 13-1-6.4-1.

d. The crew backpack functions as the seat back with a back cushion assembly. The parts are identified in (Figure 1).

(1) Refer to the Illustrated Parts Breakdown WP 028 06 for the exact configuration requirements.

4. SUBASSEMBLY CONFIGURATION.

a. The subassemblies listed below make up the A/P22P-20 Crew Backpack Assembly parachute compartment only, and are shown in (Figures 2 thru 9). Refer to the Illustrated Parts Breakdown WP 028 06 for the exact configuration requirements.

Pilot Parachute Assembly

Pilot Parachute Bridle Cord

Drogue Parachute Assembly

Drogue Bridle Assembly

PCU-68/P22P-20 Sealed Canopy Assembly

Canopy Bridle Cords (4 ea.)

Universal Water Activated Release System (UWARS)

Automatic Actuation Device (Model 2400-AAD)

Container Assembly

Manual Drogue Release Assembly/Drogue Release Cover Assembly

Soft Link Assemblies (Risers)

Ripcord Assembly (Primary)

5. PRINCIPLES OF OPERATION.

6. MANUAL OPERATION ABOVE 14,000 FT. ALTITUDE.

a. After emergency bailout, the following operation occurs:

(1) The aircrew manually pulls the ripcord handle. This removes the ripcord pin from the closing loop, and initiates the parachute deployment sequence, allowing the pilot parachute to spring from the open container and inflate.

(2) As the aircrew falls away from the inflated pilot parachute, (which acts as an anchor initiating the drogue deployment) the drogue parachute assembly inflates, and the drogue bridle pays out which in turn pulls the AAD arming cable, arming the automatic opener.

(3) The aircrew remains stabilized under the drogue parachute until increasing air pressure causes the automatic opener aneroid to contract. As the preset altitude is reached (14,000 ± 1000 ft.), a two second time delay sequence begins, initiating canopy deployment.

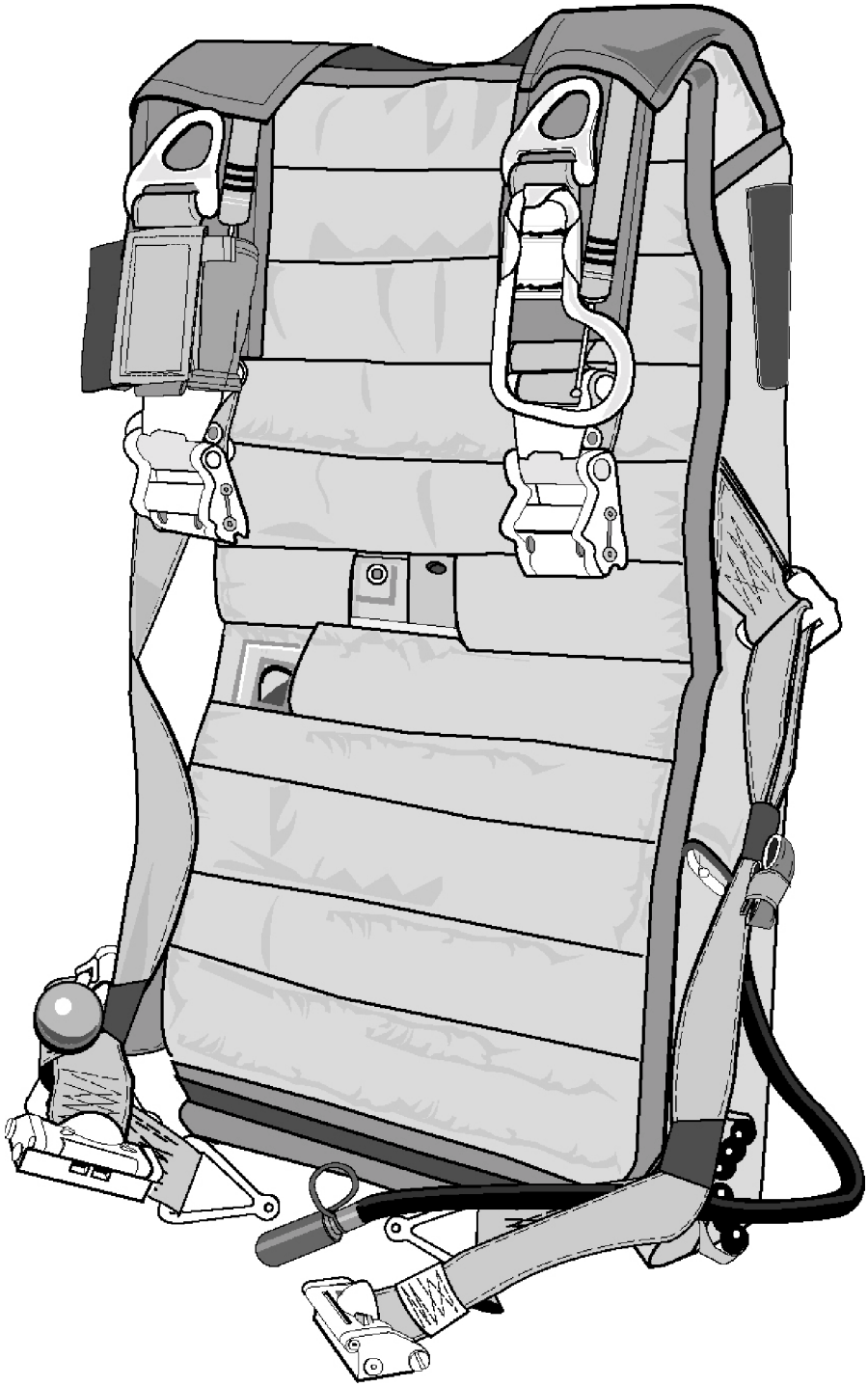

Figure 1. A/P22P-20 Crew Backpack Assembly

Figure 2. Pilot Parachute and Pilot Parachute Bridle Cord

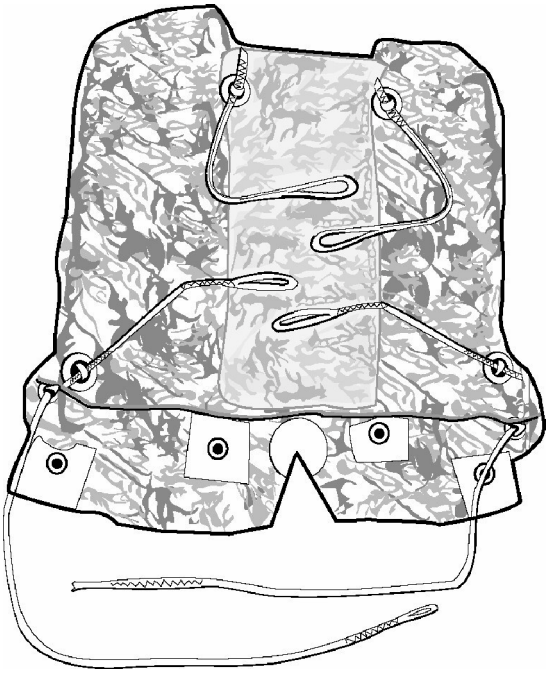

Figure 3. PCU-68/P22P-20 Sealed Canopy Assembly and Canopy Bridle Cords

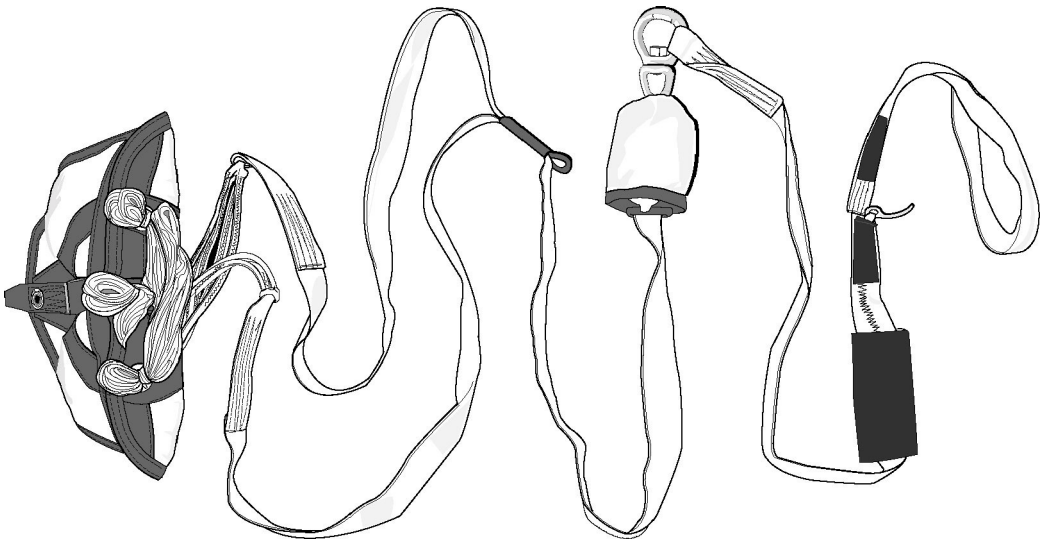

Figure 4. Drogue Assembly

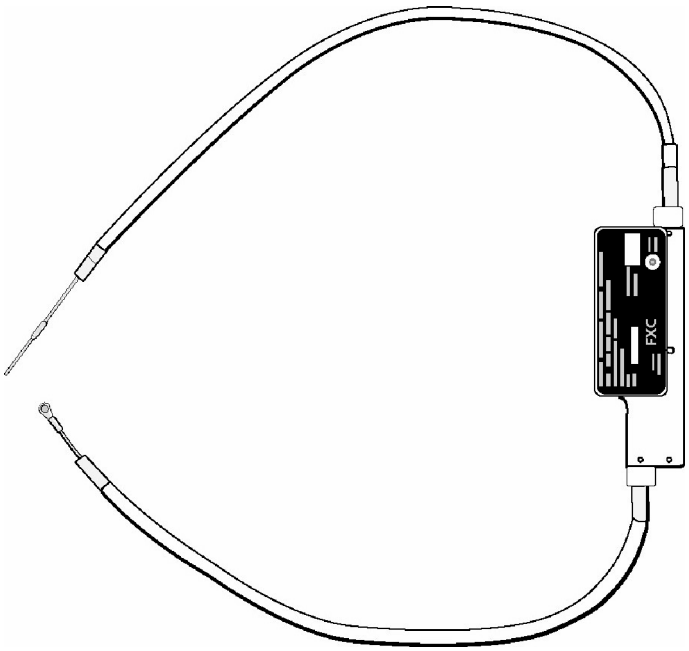

Figure 5. Model 2400 Automatic Actuation Device

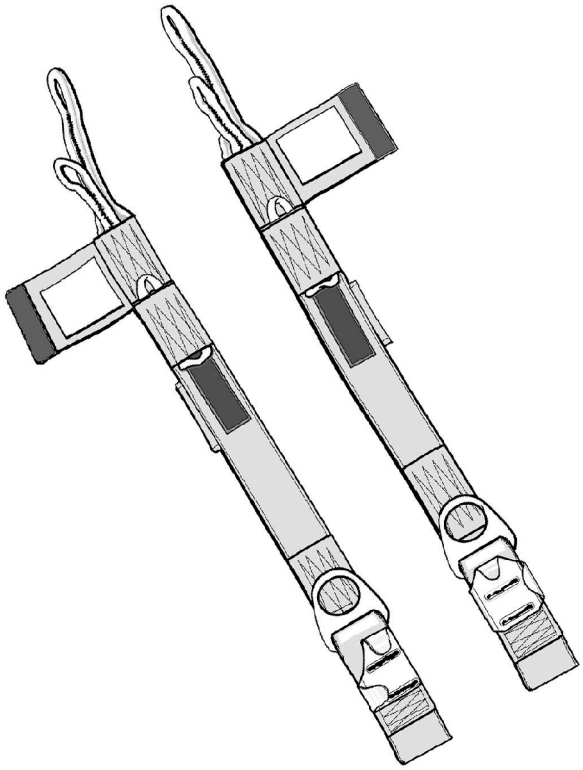

Figure 6. Soft Link Assemblies (Risers Left and Right)

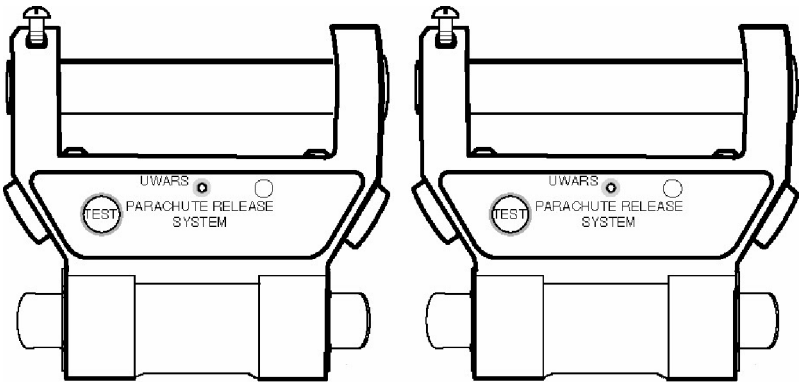

Figure 7. Universal Water Activated Release System (UWARS)

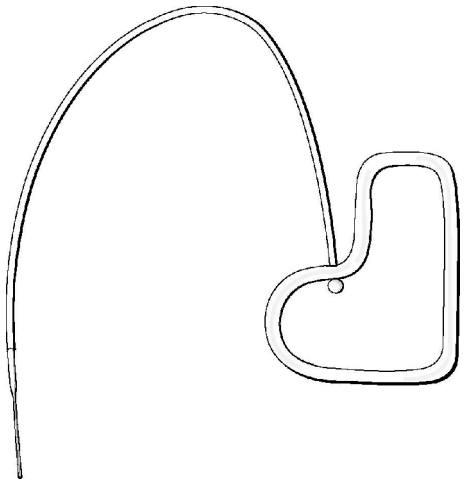

Figure 8. Ripcord Assembly (Primary)

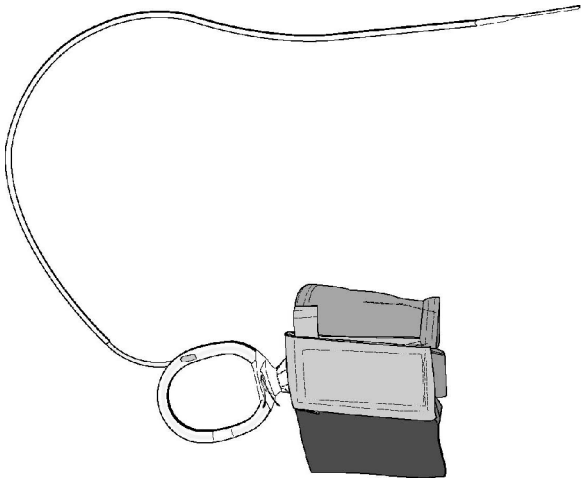

Figure 9. Manual Drogue Release Assembly/Drogue Release Cover Assembly

(4) The aircrew descends suspended in the PCU-72/P parachute restraint harness. During decent the aircrew can manually maneuver to a less hazardous landing site by using steering handles.

(5) Upon landing, the aircrew disengages the canopy from the PCU-72/P parachute restraint harness by actuation of the canopy release assemblies.

(6) The Universal Water Activated Release System (UWARS) provides an automatic backup method of releasing the parachute risers in the event the aircrew makes a seawater entry.

7. MANUAL OPERATION BELOW 14,000 FT. ALTITUDE.

a. After emergency bailout, the following operation takes place:

(1) The aircrew manually pulls the ripcord handle. This removes the ripcord pin from the closing loop, and initiates the parachute deployment sequence, allowing the pilot parachute to spring from the open container and inflate.

(2) As the aircrew falls away from the inflated pilot parachute, (which acts as an anchor initiating the drogue deployment) the drogue parachute assembly inflates, as the drogue bridle pays out this in turn pulls the AAD arming cable arming the automatic opener.

(3) The aircrew remains stabilized under the drogue parachute for two seconds, at which time the sequence begins initiating canopy deployment.

(4) The aircrew descends suspended in the PCU-72/P parachute restraint harness. During decent the aircrew can manually maneuver to a less hazardous landing site by using steering handles.

(5) Upon landing, the aircrew disengages the canopy from the PCU-72/P parachute restraint harness by actuation of the canopy release assemblies.

(6) The Universal Water Activated Release System (UWARS) provides an automatic backup method of releasing the parachute risers in the event the aircrew makes a seawater entry.

8. DELETED.

ORGANIZATIONAL MAINTENANCE

REPAIR PROCEDURES

A/P22P-20 CREW BACKPACK ASSEMBLY

PART NO. 3516AS2000-1

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Organizational, Intermediate and Depot Maintenance with Illustrated Parts Breakdown Emergency Personnel and Drogue Parachute Systems . . . . . WP 002 00

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Record of Applicable Technical Directives

None

1. INTRODUCTION.

a. This Work Package (WP) contains instructions for Organization level repair to ensure that the A/P22P-20 Crew Backpack Assembly remains in Ready-For-Issue (RFI) status.

b. When performing repairs detailed in this WP follow these guidelines:

(1) Review all applicable instructions prior to starting repairs.

(2) Ensure all necessary support equipment and materials required are available prior to starting repairs.

(3) When required remove enough material from its source for immediate use only. Ensure that the material identification ticket remains with the source material at all times. Material that cannot be identified will not be used.

(4) To ensure conformity, all repair work shall be carefully inspected and compared to applicable instructions at completion of work.

(5) A Quality Assurance (QA) inspector shall examine the finished work.

2. SOFT LINK ASSEMBLIES.

3. REPLACEMENT OF RISER TACKING.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot followed with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Hand tack anti-rotation straps as shown in Figure 1. Tack right and left risers using one turn single FF thread waxed.

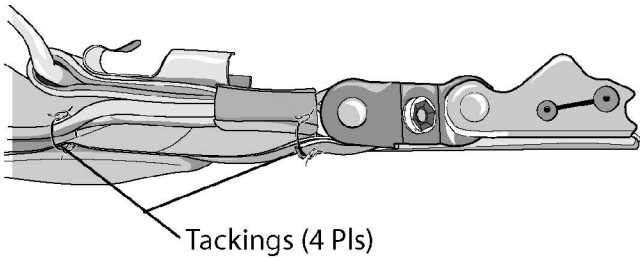

Figure 1. Tacking Anti-Rotation Straps

4. CANOPY RELEASE AND LAP BELT RESTRAINT ASSEMBLY.

NOTE

The canopy and lap belt restraint releases are identical and interchangeable. Differences in nomenclature are used to clarify positions on the assembly.

a. Repair of the canopy release assembly is limited to the following:

(1) Replacement of broken torque seal on screw head.

(2) Cleaning of dirt, grease, and other contaminating agents.

b. Replace canopy release assembly for any of the following:

(1) Failure of actuating lever to meet torque requirement.

(2) Inoperable release.

(3) Corrosion, contamination, pitting, cracks, dents, and other damage. Inspect the release lever left and right arms for cracks.

5. REPLACEMENT OF CANOPY RELEASE AND HARNESS CONNECTION STRAP CANOPY RELEASE ASSEMBLY.

Support Equipment Required

Specification or Part Number	Nomenclature
—	Flat Tip, Screw Driver
TQS-050 (Cage 557190) or TQS6 (Cage 55719)	Meter, Torque
TMA2 (Cage 55719) for use w/TQS6	Driver, Hex Head 1/16-in. bit
990055-1	Release Assembly, Canopy
122-10935-3	Set Screw
F-900 Torque Seal (Color Optional)	Sealing Compound

Materials Required

None

a. To remove the canopy release assembly, proceed as follows:

(1) Remove canopy release fitting clip from canopy release assembly.

(2) Using a wooden dowel, depress the retractable pins securing the canopy release assembly to the UWARS.

(3) Inspect replacement canopy release and harness connection strap assemblies for broken springs, corrosion, dents or sharp edges. Measure torque of knurled actuating lever as follows:

(a) Hold locking lever in open position and insert torque meter into either hexagonal cavity.

(b) Rotate actuating lever to a point just prior to contact with body. The allowable torque is 28 to 50 in-oz.

(c) Engage the male adapter (with trapezoidal notch) with canopy release or harness connection strap assembly.

(d) Verify full locking of the canopy release or harness connection strap assembly by lifting the locking lever and attempting to disengage adapter.

b. To reinstall canopy release proceed as follows:

(1) Depress spring-loaded UWARS retractable pins and slide UWARS body between lobes on canopy release assembly. Retractable pins should move freely and should spring back with no binding.

c. To remove the harness connection strap assembly, proceed as follows:

(1) Remove setscrew on backside of lap belt restraint assembly.

(2) Slide retention pin out.

NOTE

Ensure mounting of the harness connection strap assembly on the harness webbing is correct.

(3) Insert lobes of harness connection strap assembly into drogue/lap belt webbing. Insert retention pin thru webbing loop.

NOTE

Ensure setscrew is seated properly into groove of retention pin.

(4) Insert setscrew in hole on backside of lap belt restraint assembly and tighten.

(5) Apply torque seal to setscrew and body of canopy release assembly.

6. CONTAINER ASSEMBLY REPAIR.

7. REPLACEMENT OF EMERGENCY OXYGEN HOUSING FLAP LACING.

Support Equipment Required

Specification or Part Number	Nomenclature
—	—

Materials Required

Specification or Part Number	Nomenclature
PIA-C-5040	Cord, Nylon, Type I or IA

a. Cut a 30-in. length of Type I nylon cord. Starting at the green apple end, lace flaps together through every eye. Tie with a surgeon's knot, followed by a square knot. Trim off excess 1/2-in. from knot.

8. DROGUE OVERRIDE HANDLE COVER ASSEMBLY.

WARNING

If the tacking on the drogue override handle is missing or broken while inspecting, the parachute assembly will be removed from service and forwarded to Intermediate Level Maintenance to ensure drogue has not been released.

a. There are no repairs authorized for the cover.

9. FABRICATION AND REPLACEMENT OF ELASTIC WEBBING KEEPER.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
MIL-W-5664	Webbing, Elastic, Type I, Class 2, 1-in.

a. Webbing keepers.

(1) Cut a 5-in. length of elastic webbing.

(2) Pass webbing around harness. Place both ends together and sew 1/4-in. from the end and 1/8-in. from the edges, with three rows of E thread.

(3) Turn webbing inside out.

10. REPLACEMENT OF BACK PAD.

a. Remove back pad from container fastener tape.

NOTE

Ensure that the oxygen gage and AAD windows are visible through the back pad view ports when installing the back pad.

b. Secure replacement back pad to container fastener tape. (QA)

11. REPLACEMENT OF SURVIVAL GEAR COMPARTMENT RIPCORD HOUSING TACKING.

Support Equipment Required

Part Number	Nomenclature
—	Needle, Sewing

Materials Required

Specification or Part Number	Nomenclature
A-A-52080-B-2	Tape, Lacing & Tying, Finish B, Size 2, Type I, Natural

a. Tack cable housing to tacking loop on survival equipment compartment flap #5. Cable housing shall be flush with edge of tacking loop. Tack using three turns, single waxed lacing tape, tied with a surgeon's knot, followed by a square knot. Trim off excess.

b. Secure tuck flaps.

c. Tack cable housing to container harness webbing at the end of cable housing with three turns, single waxed lacing tape. The end of the cable housing shall be 1-in. from the container, tied off with a surgeon's knot followed by a square knot. Trim off excess.

12. REPLACEMENT OF MAIN RIPCORD HOUSING TACKING.

Support Equipment Required

Part Number	Nomenclature
—	Needle, Sewing

Materials Required

Specification or Part Number	Nomenclature
A-A-52080-B-2	Tape, Lacing & Tying, Finish B, Size 2, Type I, Natural

a. Route Ripcord housing through channel on left shoulder pad. Route through taking loop on Flap 7. Tack with three turns single waxed lacing tape on tacking loop. Tie off with a surgeon's knot followed by a square knot.

b. Tack housing to channel at ripcord end with three turns single waxed lacing tape. Tie off with a surgeon's knot followed by a square knot.

13. RIPCORD ASSEMBLY REPAIRS.

14. REPLACEMENT OF RIPCORD GRIP RETAINER.

Support Equipment Required

Part Number	Nomenclature
A-A-52080-B-2	Tape, Lacing & Tying Finish B, Size 2, Type 1, Natural
- or -	
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A

NOTE

Tie off all tackings with a surgeons knot topped with a square knot, followed with a binder knot. Trim off excess leaving 1/2-in.

a. Remove ripcord grip retainer and stitching from riser.

b. Position replacement retainer is same location as removed retainer and handstitch or riser with size 6 thread, doubled and waxed; tie off.

c. Perform ripcord grip pull test as follows:

(1) Fully seat ripcord grip in ripcord retainer.

(2) Set scale to zero. Attach spring scale to ripcord grip using nylon cord.

(3) Using a straight steady pull, remove grip from retainer. The pull force required to remove grip from retainer shall be 15 $\pm$5 lbs. (QA)

d. If pull force is not within limits, use a pliers to adjust clip. Ensure plier jaws are covered with protective material. After adjustment, repeat ripcord grip pull test.

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INTERMEDIATE AND DEPOT MAINTENANCE

PACKING PROCEDURES

PCU-69/P22P-20 DROGUE ASSEMBLY

PART NO. 3516AS6400-1

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Intermediate and Depot Maintenance, Packing Procedures, A/P22P-20 Crew Backpack Assembly ..... WP 028 04
Organizational, Intermediate and Depot Maintenance, Illustrated Parts Breakdown, A/P22P-20 Crew Backpack Assembly ..... WP 028 06
Organizational, Intermediate and Depot Maintenance with Illustrated Parts Breakdown Emergency Personnel and Drogue Parachute Systems ..... WP 002 00
Organizational, Intermediate and Depot Maintenance, Parachute Loft Requirements/Administration ..... WP 003 00
Organizational, Intermediate and Depot Maintenance, Support Equipment ..... WP 005 00

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Record of Applicable Technical Directives

None

1. GENERAL.

a. This Work Package (WP) provides packing procedures with the assumption that they will be carried out under ideal conditions in a parachute loft in accordance with WP 003 00. When the PCU-69/P22P-20 drogue assembly must be packed under unfavorable conditions, provisions must be made to protect it from possible damage and excessive humidity.

b. In no case shall the packing procedures be interrupted after the operation has started. If the packing operation is interrupted due to unforeseen circumstances, the drogue parachute shall be completely repacked as detailed in this WP.

c. Quality Assurance (QA) points are included in the packing procedures. When a procedural step is followed by (QA), a quality assurance requirement exists. Witnessing of the QA steps may be delayed by QA if their satisfactory completion is verified in later steps.

2. PRELIMINARY PROCEDURES.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Shot Bag (4)
—	Packing Aids/Bodkin
—	Ruler

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Type I or II, Class A, Size E

a. Ensure all support equipment and material required are available prior to starting.

b. Clean packing table.

3. LAYOUT/DISASSEMBLE OF DROGUE ASSEMBLY.

a. Refer to WP 028 04 for disassemble drogue procedures.

4. INSPECTION (SPECIAL).

a. Maximum scheduled repack cycle is 1792 days.

5. LAYOUT OF DROGUE PARACHUTE ASSEMBLY.

a. Remove drogue parachute from drogue deployment bag. Remove tacking attaching drogue parachute to drogue deployment bag.

b. Attach tension strap hook to drogue assembly apex.

6. SERVICE LIFE CHECK AND CONFIGURATION UPDATING.

NOTE

Unless otherwise noted, parachute component life shall start on the month of the date of manufacture and expire on the last day of that month.

a. All internal service life components, including cartridges, shall be replaced if service life expires prior to the next repack cycle. Repack cycles may be shortened to correspond to the first component that is expiring prior to the next inspection cycle. An external overage component (i.e. Universal Water Activated Release System) can be replaced without a parachute repack.

NOTE

Upon initiation of any Quality Deficiency Report (QDR), contact the In-Service Support Team at NAWCWD, China Lake, CA.

b. When replacing an external overage component without a parachute repack, draw a single red line through any information pertaining to that component on the Parachute Record (OPNAV 4790/101). The replacement component will be annotated on the next available line. The QA who witnessed the task shall apply the QA stamp to the right of the entry and complete the VIDS/MAF (OPNAV 4790/60).

c. A parachute assembly may be opened to permit compliance with a Technical Directive. After completion of directive, the parachute assembly repack cycle may be re-based if all parachute components have the necessary life available or may be returned with the original repack date in order to keep it aligned with the actual aircraft inspection cycle.

d. When a component reaches the service/total life limit, it shall be returned to supply for disposition.

e. If parts received from supply are lacking a date of manufacture and are new in manufacturer's packaging, they may be used for one complete repack cycle, then removed. Place "No Date of Manufacture" in the Date of Manufacture's block on the Parachute Record (OPNAV 4790/101). Submission of a Quality Deficiency Report (QDR) shall follow each occurrence.

f. Components without a service/total life shall be removed from service if the components do not pass inspection, as determined by Quality Assurance Representative (QAR) or Collateral Duty Inspector (CDI).

g. Check date placed in-service and date of manufacture on each drogue parachute assembly component for service life as follows:

Nomenclature	Service Life	Total Life
Drogue Parachute Deleted	None	14

(1) Check markings for completeness, legibility, and accuracy with information on parachute record (OPNAV 4790/101). (QA)

(2) Compare configuration of parachute assembly to that shown on NAVAIR 13-1-6.2 Record of Applicable Technical Directives and Illustrated Parts Breakdown, WP 028 06.

(3) Early production drogue parachute canopy gores were produced without numbered gores. Gores must be marked legibly per this WP.

7. INSPECTION OF DROGUE PARACHUTE ASSEMBLY.

a. Inspect canopy fabric surfaces, seams for seam separation and suspension lines at canopy apex for contamination, mildew, cuts tears, or fraying, and loose or broken stitching.

b. Inspect canopy apex to drogue deployment bag attachment loop for loose or broken tackings connecting suspension lines.

c. Inspect suspension lines for cuts tears, fraying, and loose or broken stitching.

d. Inspect riser straps for cuts tears, fraying, and loose or broken stitching.

e. Inspect swivel cover assembly for contamination, cuts tears, and loose or broken stitching.

f. Inspect swivel for corrosion, and freedom of rotation.

g. Inspect drogue parachute bridle strap for cuts, fraying, and loose or broken stitching.

h. Inspect curved pin for cracks, bends, nicks, burrs and corrosion. Check drogue parachute bridle strap for security of attachment.

i. Inspect pile fastener (4 places) on bridle strap for loose or broken stitching.

8. INSPECTION OF DROGUE PARACHUTE DEPLOYMENT BAG.

a. Inspect grommets (8 places) for security of attachment, cracks, bent, and corrosion.

b. Inspect drogue deployment bag for contamination, cuts tears, and loose or broken stitching.

c. Inspect drogue deployment bag flute channels for loose or broken stitching.

9. CONTINUITY CHECK.

a. Lay drogue parachute on table with information label facing up, centered, and drogue parachute arming loop facing upward. Perform a continuity check (Figure 1).

Figure 1. Drogue Parachute Layout Identification Label Centered

b. Locate suspension lines 1 and 10 and follow them to the riser. Remove all twists. Repeat for remaining lines. Ensure drogue parachute suspension lines are sequentially attached to riser (Figure 2).

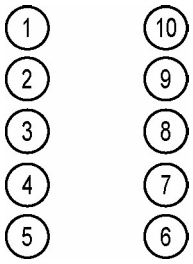

Figure 2. Suspension Lines Orientation

c. Split suspension lines between lines 1 and 10 in equal numbers on each side and ensure no twists (Figure 3). (QA)

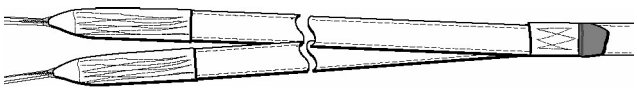

Figure 3. Split Suspension Lines

10. FOLDING OF DROGUE PARACHUTE ASSEMBLY.

a. Position deployment bag so locking loops are facing up and stowage flutes on deployment bag are down on table surface. Turn deployment bag inside out (Figure 4). (QA)

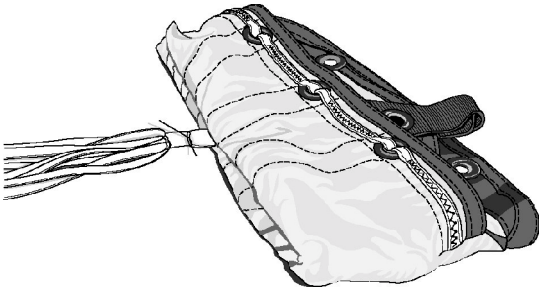

Figure 4. Deployment Bag Position

b. Attach vent lines by passing one turn single "E" thread through the drogue attachment loop, around the vent lines, then route thread back through the drogue attachment loop. Form a 1/2-in. loop, tie off knot at the deployment bag attachment loop with a surgeons knot followed by a square knot and a binders knot. Trim to 1/2-in. (Figures 5 and 6).

Figure 5. Attachment of Vent Lines

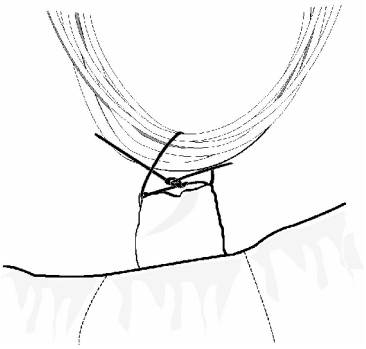

Figure 6. Vent Line Tie-Off

c. Attach the drogue parachute apex to the apex tension strap hook.

d. Insert tension hook into packing table. Attach drogue bridle strap to tension hook. Apply light tension to the drogue bridle strap to hold in place (Figure 7).

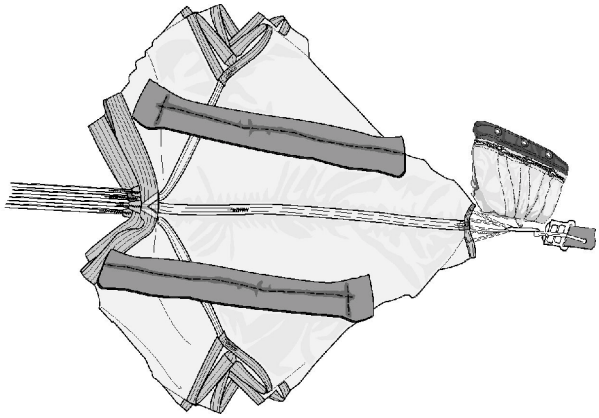

Figure 7. Flaked Panels

e. Align and straighten the apex.

f. Keep tension on suspension lines, and flake panels 1 through 10.

g. Hold in place with shot bags (Figure 7).

NOTE

Ensure there are five (5) flat panels to each side of the suspension lines.

h. Place one-shot bag across the top of the drogue parachute canopy (Figure 8).

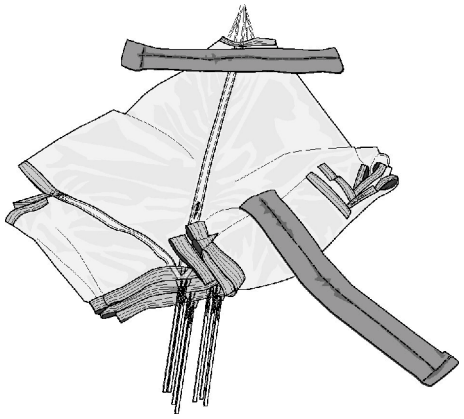

Figure 8. Drogue Parachute Canopy Right Fold

i. Fold five (5) small canopy panels right side, up and inward. Hold in place with shot bag (Figure 8).

j. Repeat step i, for left side and reposition shot bags (Figure 9).

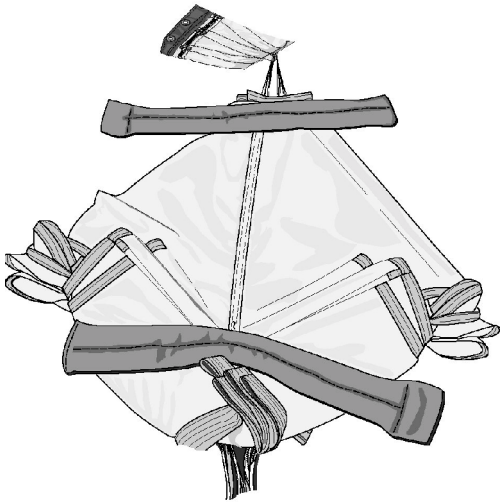

Figure 9. Drogue Parachute Canopy (Leftside) Panel Fold

k. Take the leading edge and fold the five (5) right-side panels inward (#6-10 panels) and parallel to the suspension lines. Hold in place with shot bags (Figure 10).

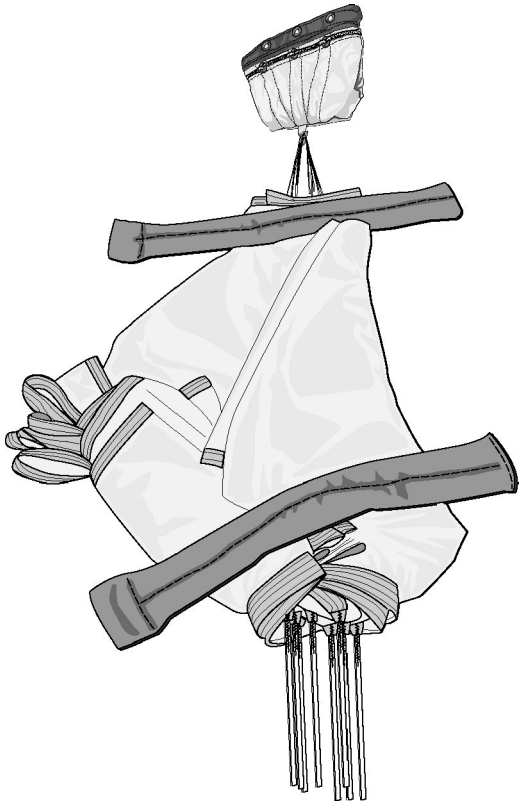

Figure 10. Right Side Panels 6-10 Folded

l. Take the leading edge and fold the five (5) left-side panels inward (#1-5 panels) and parallel to the suspension lines, over the previously folded panels until the folded width is equal to the width of the deployment bag (Figure 11).

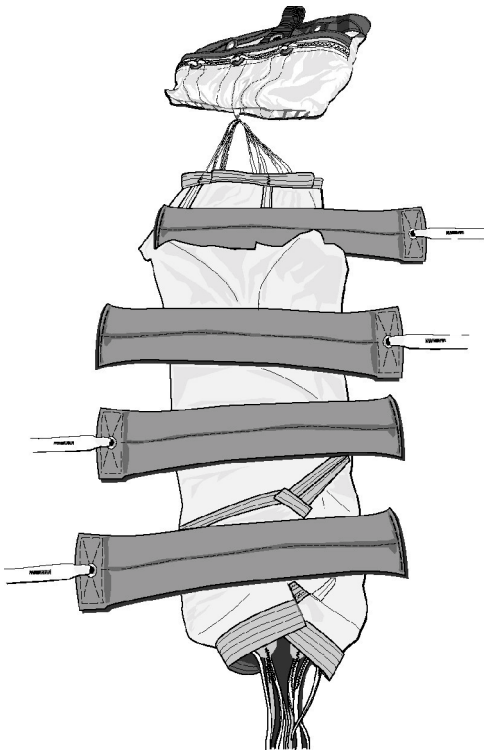

Figure 11. Left Side Panels 1-5 Folded

m. Reposition shot bags.

n. Drogue canopy should be approximately 9-in. wide when second fold is made.

o. Disconnect drogue parachute apex from apex tension strap hook.

p. Start at the skirt end making 3-in. folds, S-fold the drogue parachute four (4) places working toward the apex (Figure 12).

Figure 12. Drogue Parachute S-fold

q. Place apex of drogue parachute to the right on top of folds. Hold in place with shot bag (Figure 13).

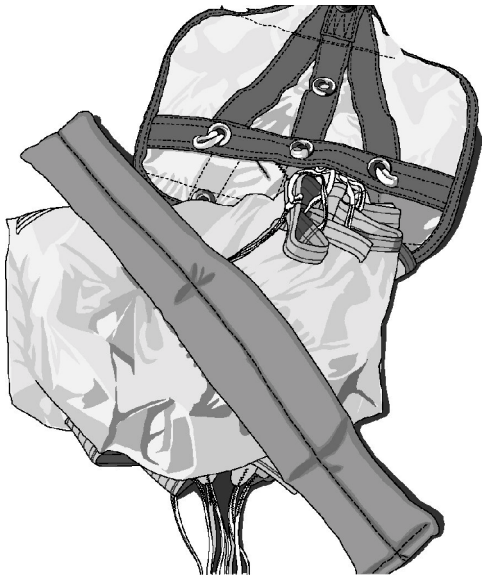

Figure 13. Apex Placement

r. Turn deployment bag right side out and position it so that the stowing flutes side of the bag faces the table and the locking loops face up.

s. Remove shot bag. Stow the folded drogue parachute into the deployment bag.

t. Place drogue parachute in deployment bag with suspension line attachment points to the left side of the deployment bag (Figure 13).

11. CLOSING OF DROGUE PARACHUTE DEPLOYMENT BAG.

a. Verify the suspension line group exists in the left side of the deployment bag (Figure 14).

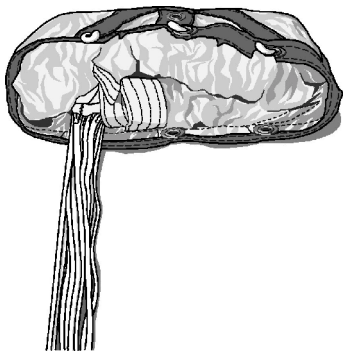

Figure 14. Suspension Line Group Placement

b. Route pull up cord through middle locking loop and up through the corresponding grommet. Secure loop in place with a temporary pin.

c. Make the first (of 3) stows by forming a loop in the suspension line group, wrap pull up cord around the suspension line group and pull it through the middle locking loop until 1 to 1 1/2-in. protrude past the loop (Figure 15).

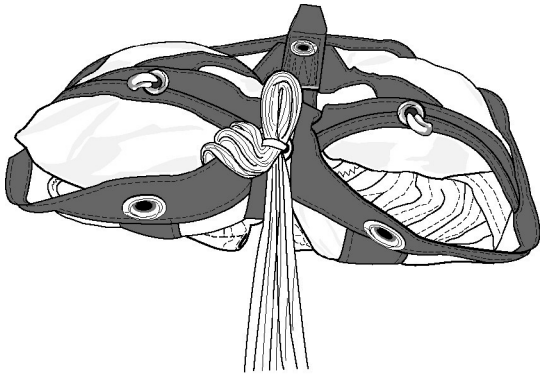

Figure 15. First Suspension Line Group Stow

d. Route pull up cord through right side and pull, pull up cord through locking loop.

e. Make the second stow on the right-side by forming a loop in the suspension line group, wrap pull up cord around the suspension line group and pull it through the right locking loop until 1 to 1 1/2-in. protrude past the loop (Figure 16).

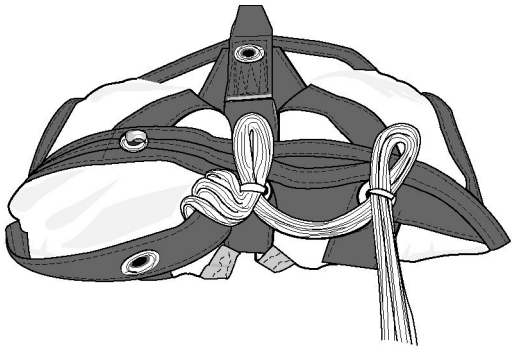

Figure 16. Second Suspension Line Group Stow

f. Route pull up cord through left side and pull, pull up cord through locking loop.

g. Make the third stow on the left-side by forming a loop in the suspension line group, wrap pull up cord around the suspension line group and pull it through the left locking loop until 1 to 1 1/2-in. protrude past the loop. Remove pull up cords (Figure 17).

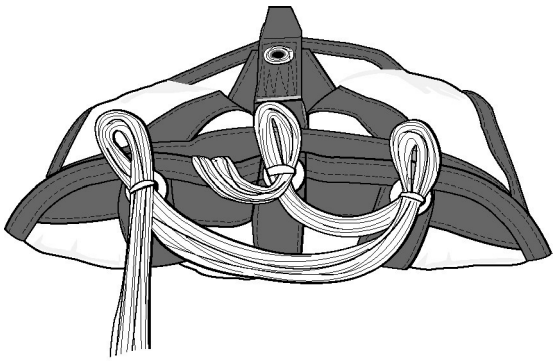

Figure 17. Third Suspension Line Group Stow

h. Dress up the deployment bag. (QA).

12. STOWAGE OF SUSPENSION LINES.

NOTE

Stow ends of suspension line groups even with ends of stowage flutes.

a. Rotate the deployment bag assembly over so stowing flutes are facing upward.

b. Route the suspension line group between the stowage flutes. Form a loop in the suspension line group; wrap pull up cord around the suspension line group and route pull cord up through the upper left stowage flute. Pull suspension line group through stowage flute until suspension line group is even with edge of stowage flute (Figure 18).

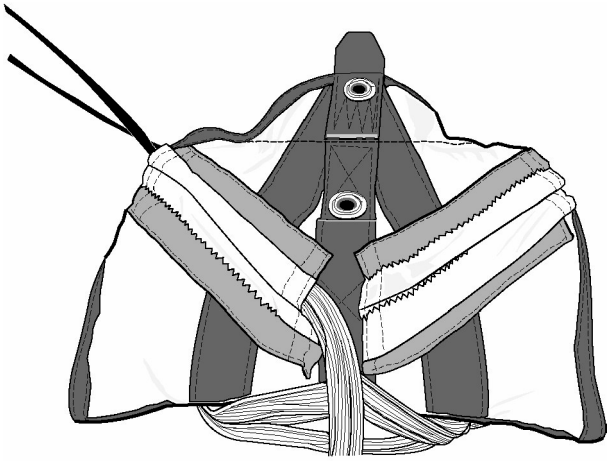

Figure 18. First Stow in Upper Left Stowage Flute

c. Make second stow in the upper right stowage flute (Figure 19).

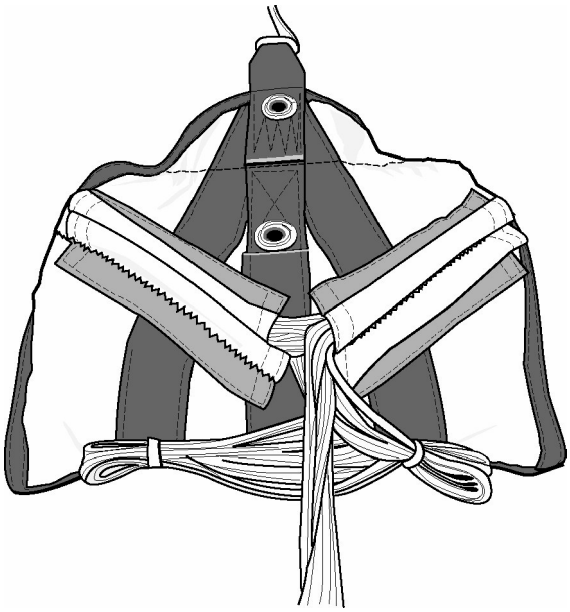

Figure 19. Second Stow in Upper Right Stowage Flute

d. Make alternating stows until finger trapped area of suspension lines are even with the bottom of the deployment bag. Last suspension line group stow may not fill stowage flute (Figures 20 and 21). (QA)

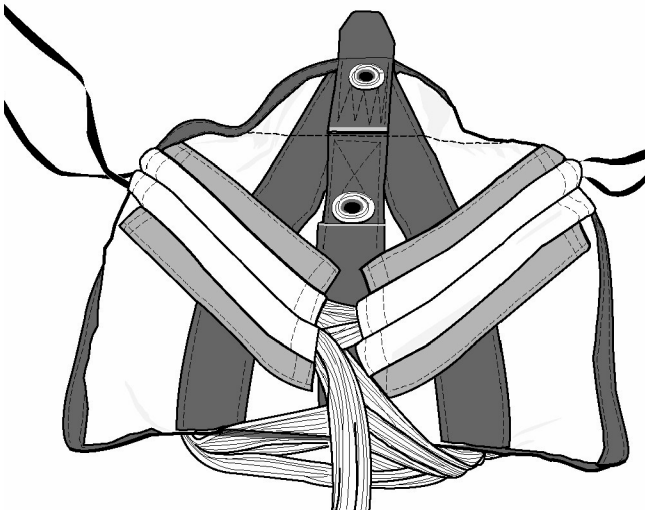

Figure 20. Alternating Stows of Suspension Lines

NOTE

Last suspension line group stow may not fill stowage flute. Remove pull up cord.

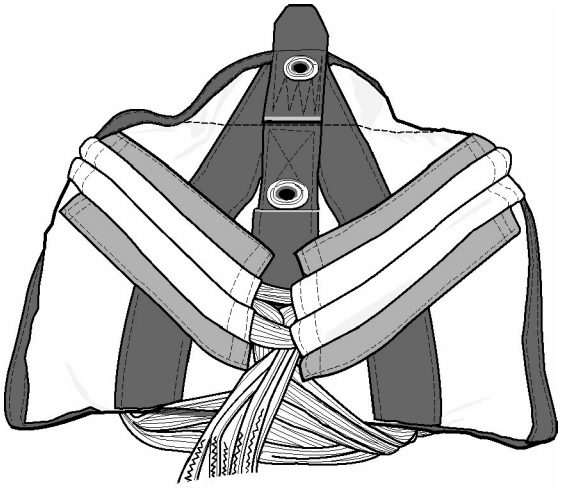

Figure 21. Last Stow of Suspension Lines

13. FINAL CHECK.

a. Inspect packed Drogue Assembly for general condition. (QA)

b. Account for all packing tools. (QA)

INTERMEDIATE MAINTENANCE

ORIGINAL ISSUE, SPECIAL INSPECTION, AND REPAIR PROCEDURES

A/P22P-20 CREW BACKPACK ASSEMBLY

PART NO. 3516AS2000-1

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Aviation-Crew Systems Manual, Seat Survival Kits (Oxygen Hoses and Non-SKU Series Set Kits) . . . . . NAVAIR 13-1-6.3-1
Intermediate and Depot Maintenance, Final Closing Procedures, A/P22P-20 Crew Backpack Survival Equipment Compartment . . . . . WP 028 05
Intermediate and Depot Maintenance, Maintenance Procedures, PCU-63(V)1/P Universal Water Activated Release System (UWARS) . . . . . WP 029 02
Organizational, Intermediate and Depot Maintenance, Parachute Loft Requirements/Administration . . . . . WP 003 00
Organizational Maintenance Repair Procedures, A/P22P-20 Crew Backpack Assembly . . . . . WP 028 01

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Record of Applicable Technical Directives

None

1. GENERAL.

a. This Work Package (WP) provides original issue instructions for the A/P22P-20 Crew Backpack Assembly.

b. The A/P22P-20 Crew Backpack Assembly consists of three distinct systems, (1) Parachute Assembly, (2) Survival Kit Assembly, and (3) Emergency Oxygen System Assembly.

c. Upon receipt of the Crew Backpack Assembly, the assembly must be made Ready-For-Issue (RFI).

d. Quality Assurance (QA) points are included in the packing procedures. When a procedural step is followed by (QA), a quality assurance requirement exists. Witnessing of the QA step may be delayed by QA, if their satisfactory completion is verified in a later step.

2. ORIGINAL ISSUE PRELIMINARY PROCEDURES.

Support Equipment Required

Part Number	Nomenclature
—	Curved Upholstery Needle
—	Packing Table
—	Scissors
—	Calibrated Scale

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon Type I or II, Class A, Size E

a. Ensure that all support equipment and materials required are available prior to starting.

b. Inspect packing tools for nicks, burrs, or sharp edges which may cause damage to the parachute.

c. Count and record number of packing tools.

d. Clean the packing table.

3. INSPECTION.

NOTE

If discrepancies are discovered, submit a Quality Deficiency Report (QDR) and notify: Commander, Code 461000D, NAVAIRWARCENWPNDIV, Fleet Support Team, 1900 N Knox Road Stop 6206, China Lake, CA 93555-6106.

a. Remove A/P22P-20 from shipping container.

b. Inspect Crew Backpack Assembly for any signs of damage which may have been caused by shipping.

c. Lay Crew Backpack Assembly on packing table, container closing flaps facing up.

d. On upper portion of Crew Backpack Assembly, open the ripcord pin protector flap (Figure 1).

Figure 1. Ripcord Pin Security

e. Ensure lead shipping seal is intact and ripcord pin is properly seated. If lead seal is missing or safety tie is broken, the Crew Backpack Assembly is Not-Ready-For-Issue (NFRI), submit a QDR per note.

NOTE

The A/P22P-20 is shipped from the manufacturer without the Universal Water Activated Release System (UWARS) units and the day/night flare installed. Installation of these items and the servicing of the oxygen assembly must be accomplished before the parachute assembly may be made Ready-For-Issue (RFI).

4. INSTALLATION OF UNIVERSAL WATER ACTIVATED RELEASE SYSTEM (UWARS) UNITS.

a. Install UWARS per WP 029 02.

b. Document lot numbers, serial numbers and date of manufacture on Parachute Record (OPNAV 4790/101).

5. REMOVAL OF SURVIVAL KIT AND OXYGEN SYSTEM.

6. OPENING SURVIVAL KIT COMPARTMENT.

a. Position harness/container on packing table with bottom edge of survival compartment facing packer.

b. Open top cover flap on survival compartment.

c. Ensure lead shipping seal is intact and ripcord pin is properly seated. If lead seal is missing or safety tie is broken, the Crew Backpack Assembly is Not-Ready-For-Issue (NFRI), submit a QDR per note.

d. Place one hand over ripcord pin with firm pressure. With other hand, pull on survival ripcord cable to remove ripcord pin from closing loop.

e. Open survival compartment flaps.

f. Disconnect yellow lanyard hook.

g. Remove Survival Equipment Kit/Liferaft module and forward to appropriate work section for Place-in-Service Inspection per NAVAIR 13-1-6.3-1.

7. REMOVAL OF EMERGENCY OXYGEN SYSTEM.

a. Cut and remove Type I nylon cord securing emergency oxygen system (2 places) at green apple stowage flute and lacing at O2 bottle flap.

b. Remove emergency oxygen (CRU-109/P22P-20), and forward to appropriate work section for inspection/maintenance and filling per NAVAIR 13-1-6.4-1.

8. INSTALLATION OF OXYGEN SYSTEM AND SURVIVAL KIT.

a. Refer to WP 028 05 for installation and final closing procedures.

9. CANOPY MODULE LOSS OF VACUUM PROCEDURES.

NOTE

If the canopy module develops a leak, it will be necessary to vent the module to allow the module to breathe. This will prevent the aircrew from being forced forward in the seat due to expansion of the bag at altitude or inadvertent aircraft decompression.

a. Position harness/container on packing table, closing flaps up.

b. On the left side (ripcord side), separate the fastener tape located at the shoulder. This will expose the sealed canopy module.

c. Locate one of the initiator cuts. The initiator cuts can be distinguished by a scissor cut in the foil bag.

WARNING

The following step does not require tools or sharp objects. Canopy damage may occur.

d. Slowly tear foil bag at the initiator cut 1 to 2-in.

e. Close the flaps by mating hook and pile fastener tape.

f. Cut a 5-in. piece of 2-in. cotton webbing.

g. Cut a 4-in. piece of 2-in. hook fastener tape.

h. Fold each end of cotton webbing under and sew to hook faster tape with E thread.

i. With an indelible marker write, “VENTED” in 1/2-in. letters, and add the date canopy module was vented (Figure 2).

Figure 2. "Vented" Tag

j. Place velcro patch on the rear of container assembly and mate with the pile fastener tape provided.

k. In the remarks section of the Parachute Record (OPNAV 4790/101), note that the canopy module has been vented.

l. QA inspector shall stamp the entry.

10. 896-DAY RIPCORD PIN PULL FORCE CHECK.

a. Route a length of Type III pull-up cord around ripcord pin, and secure to ripcord cable with 3 to 4 half-hitches. This will prevent the ripcord pin from being fully removed (Figure 3).

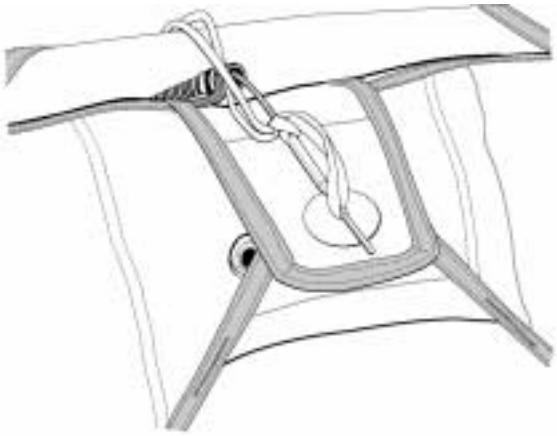

Figure 3. Pull-Up Cord Routing

b. Set spring tester to zero.

c. Ensure ripcord grip is fully seated in ripcord grip retainer. Attach spring scale to ripcord grip using nylon cord. Using a straight steady pull, remove grip from retainer. Force required shall be 15 ± 5 lbs.

d. If pull force is not within limits, use pliers to adjust ripcord grip retainer. Ensure jaws of pliers are covered with protective material to prevent gouging. After adjustment, repeat ripcord grip pull test.

e. Reset scale to zero. Apply a straight steady pull on ripcord grip until initial movement of ripcord pin is observed. Maximum allowable force is 27 lbs. (QA)

f. Remove pull-up cord. (QA)

g. Stow ripcord grip in ripcord grip retainer.

h. Reposition ripcord pin so it is at least three quarters seated in the closing loop.

i. Insert center tuck tab on flap #8 into center keeper on flap #7.

j. Engage tuck tabs on flap #8 under flap #7.

k. Insert flap #8 into slot on flap #6.

l. Annotate the ripcord pin pull force on Parachute Record (OPNAV 4790/101).

m. Report findings to: Commander, Code 461000D, NAVAIRWARCENWPNDIV, 1900 N Knox Road Stop 6206, China Lake, CA 93555-6106.

11. FABRICATION AND ROUTING OF CLOSING LOOPS.

12. FABRICATION OF DROGUE ATTACHMENT LOOP.

Materials Required

Specification or Part Number	Nomenclature
9512-300-UNT Suggested Source: CSR Inc 3235 State Road Sellersville, PA 18960 Phone (215) 453-0600	Cord, Spectra 300 lb, Untreated

NOTE

All dimensions are ± 1/8-in.

a. Cut a length of 300 lb Spectra 11-in. long.

b. Fold in half.

c. From loop end mark 5/8-in. on the lower most piece of cord.

d. Insert bodkin in the lower most end of Spectra.

e. Carefully work the bodkin in the center of Spectra and exit at the 5/8-in. mark.

f. Draw the other end of Spectra back through center of cord. Forming a 5/8 ± 1/8-in. loop (Figure 4).

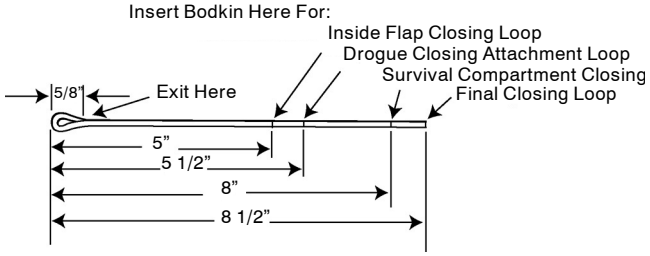

Figure 4. Fabrication of Closing Loops

g. Fingertrap shall extend the whole length of cord.

13. ROUTING OF DROGUE ATTACHMENT LOOP.

a. Route closing loop per illustration (Figure 5).

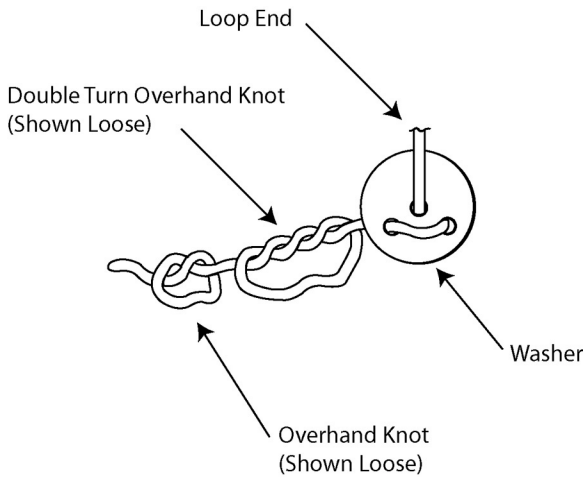

Figure 5. Routing and Tying of Closing Loops

b. Measure and leave approximately 3/4 ± 1/8-in. from the washer to the end of the loop.

c. On the back side, form the double overhand knot (Figure 5).

d. Verify measurement.

e. Form an overhand knot behind the double overhand knot (Figure 5).

f. Measure and make any adjustments necessary.

g. Set knots by pretensioning using 240 ± 20 in-lbs. between washer and loop.

14. FABRICATION OF INSIDE FLAP CLOSING LOOP.

a. Cut a length of 300 lb Spectra 10-in. long.

b. Fold in half.

c. From loop end mark 5/8-in. on the lower most piece of cord.

d. Insert bodkin in the lower most end of Spectra.

e. Carefully work the bodkin in the center of Spectra and exit at the 5/8-in. mark.

f. Draw the other end of Spectra back through center of cord. Forming a 5/8 ± 1/8-in. loop (Figure 4).

g. Fingertrap shall extend the whole length of cord.

15. ROUTING OF INSIDE FLAP CLOSING LOOP.

a. Route closing loop per illustration (Figure 5).

b. Measure and leave approximately 1/2 ± 1/8-in. from the washer to the end of the loop.

c. On the back side, form the double overhand knot (Figure 5).

d. Verify measurement.

e. Form an overhand knot behind the double overhand knot (Figure 5).

f. Measure and make any adjustments necessary.

g. Set knots by pretensioning using 240 ± 20 in-lbs. between washer and loop.

16. FABRICATION OF FINAL PARACHUTE CONTAINER CLOSING LOOP.

a. Cut a length of 300 lb Spectra 17-in. long.

b. Fold in half.

c. From loop end mark 5/8-in. on the lower most piece of cord.

d. Insert bodkin in the lower most end of Spectra.

e. Carefully work the bodkin in the center of Spectra and exit at the 5/8-in. mark.

f. Draw the other end of Spectra back through center of cord. Forming a 5/8 ± 1/8-in. loop (Figure 4).

g. Fingertrap shall extend the whole length of cord.

17. ROUTING OF FINAL PARACHUTE CONTAINER CLOSING LOOP.

a. Route closing loop per illustration (Figure 5).

b. Measure and leave approximately 4 1/2 ± 1/8-in. from the washer to the end of the loop.

c. On the back side, form the double overhand knot (Figure 5).

d. Verify measurement.

e. Form an overhand knot behind the double overhand knot (Figure 5).

f. Measure and make any adjustments necessary.

g. Set knots by pretensioning using 240 ± 20 in-lbs. between washer and loop.

18. FABRICATION OF SUPPORT EQUIPMENT CONTAINER CLOSING LOOP.

a. Cut a length of 300 lb Spectra 16-in. long.

b. Fold in half.

c. From loop end mark 5/8-in. on the lower most piece of cord.

d. Insert bodkin in the lower most end of Spectra.

e. Carefully work the bodkin in the center of Spectra and exit at the 5/8-in. mark.

f. Draw the other end of Spectra back through center of cord. Forming a 5/8 ± 1/8-in. loop (Figure 4).

g. Fingertrap shall extend the whole length of cord.

19. ROUTING OF SUPPORT EQUIPMENT CONTAINER CLOSING LOOP.

a. Route closing loop per illustration (Figure 5).

b. Measure and leave approximately 3 1/2 ± 1/8-in. from the washer to the end of the loop.

c. On the back side, form the double overhand knot (Figure 5).

d. Verify measurement.

e. Form an overhand knot behind the double overhand knot (Figure 5).

f. Measure and make any adjustments necessary.

g. Set knots by pretensioning using 240 ± 20 in-lbs. between washer and loop.

20. FINAL CHECKOUT.

a. Account for all packing tools.

b. Inspect packed A/P22P-20 Crew Backpack Assembly for general condition.

c. Packer shall complete and sign Parachute Record (OPNAV 4790/101). (QA)

d. QA inspector shall examine completeness and accuracy of all entries on Parachute Record (OPNAV 4790/101).

e. QA inspector shall sign Parachute Record (OPNAV 4790/101).

f. Send a (legible) copy of new Parachute Record to: Commander, Code 461000D, NAVAIRWARCENWPNDIV, 1900 N Knox Road Stop 6206, China Lake, CA 93555-6106.

INTERMEDIATE AND DEPOT MAINTENANCE

PACKING PROCEDURES

A/P22P-20 CREW BACKPACK ASSEMBLY

PART NO. 3516AS2000-1

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Reference Material

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Aviation-Crew Systems Manual, Seat Survival Kits (Oxygen Hoses and Non-SKU Series Set Kits) . . . . . NAVAIR 13-1-6.3-1
Cartridge Actuated Devices (CADS) and Propellant Actuated Devices (PADS) (IETM) . . . . . NAVAIR 11-100-1.1
Intermediate and Depot Maintenance, Final Closing Procedures, A/P22P-20 Crew Backpack Survival Equipment Compartment . . . . . WP 028 05
Organizational, Intermediate and Depot Maintenance, Parachute Loft Requirements/Administration . . . . . WP 003 00
Organizational, Intermediate and Depot Maintenance, Support Equipment . . . . . WP 005 00
Organizational Maintenance, Inspection and Repair Procedures, PCU-63(V)1/P Universal Water Activated Release System (UWARS) . . . . . WP 029 01

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Record of Applicable Technical Directives

None

1. GENERAL.

a. This Work Package (WP) provides packing instructions for the A/P22P-20 Crew Backpack Assembly.

b. Packing instructions are provided with the assumption that they will be carried out under ideal conditions in a parachute loft WP 003 00. When a parachute assembly must be packed under unfavorable conditions, provisions must be made to protect it from possible damage and excessive humidity.

c. In no case shall packing of a parachute assembly be interrupted after the packing operation has been started. If the packing operation is interrupted due to unforeseen circumstances, the parachute assembly shall be completely repacked per instructions contained in the WP.

d. Quality Assurance (QA) points are included in the packing procedures. When a procedural step is followed by (QA), a quality assurance requirement exists. Witnessing of the QA step may be delayed by QA, if their satisfactory completion is verified in a later step.

e. When performing scheduled maintenance, a component that will not make the next scheduled repack cycle shall be replaced.

2. PRELIMINARY PROCEDURES.

Support Equipment Required

Part Number	Nomenclature
811-00394	Cocking Fixture
711-07153	Altitude Chamber
411-00254	Cable, Test Arming
411-00137	Cable, Test Power
311-40203	Cushion Bumper
511-00531	Housing, Test Power Cable
DPP-50	Tester, Spring Resiliency
Refer to WP 005 00	Roll Bar
1979AS950-1	Closing Plate
OEX100	Wrench Combination 5/16-in.
TMRX10	Crowfoot, Socket Wrench 5/16-in.
TQS6	Driver, Torque, in.-lbs.
—	(2) Cypres Closing Pins
—	Needle, Sewing Curved
—	Scissors
—	Ruler, 12-in.
—	Pull-up Cord
Refer to WP 005 00	Shot Bag (6)
—	Apex Holder
PIA-C-5040	Cord, Nylon, Type I or IA
—	Bodkin
—	T-Handle

Materials Required

Specification or Part Number	Nomenclature
A-A-52080-B-2	Tape, Lacing & Tying Finish B, Size 2, Type I, Natural
V-T-295	Thread, Nylon, Type I or II, Class A, Size A
V-T-295	Thread, Nylon Type I or II Class A, Size E
V-T-295	Thread, Nylon Type I or II Class A, Size FF
F-900 Torque Seal (Color Optional)	Sealing Compound
3516AS2020-9	Set, Closing Loop

3. LAYOUT/DISASSEMBLE PARACHUTE ASSEMBLY.

CAUTION

When performing disassembling procedures watches and rings must be removed to prevent puncturing or tearing of the sealed canopy assembly bag.

a. Position harness/container on packing table.

b. Open top cover flap.

c. Place one hand over ripcord pin, apply firm pressure. Using other hand pull on ripcord cable to remove ripcord pin from closing loop. Maintain control of pilot parachute as it exits through container flaps and fully extends.

NOTE

Replacement of the inside closing loop, drogue attachment loop, and final closing loop must be accomplished each time the parachute compartment has been opened and the pins have been removed.

d. Open parachute container flaps, and both shoulder flaps.

e. Remove ripcord handle assembly from ripcord clip.

CAUTION

Pulling on drogue bridle may cause inadvertent firing of the Automatic Actuation Device.

f. Remove arming cable tie.

g. Loosen Lark's head knot on pilot parachute. Route the bottom of pilot parachute through the large loop of the pilot parachute bridle cord. Remove pilot parachute.

CAUTION

When separating the drogue and drogue bridle from the sealed canopy bridle cords care must be taken to prevent tearing the vacuum seal initiators.

h. Loosen Lark's head knot on drogue deployment bag. Remove pilot parachute bridle cord. Remove curved pin from drogue locking loop.

i. Undo hook and pile faster on drogue attachment assembly flap.

j. Remove manual override ripcord cable from pocket and drogue loop. Remove tacking from swivel protective sleeve. Slide swivel protective sleeve upwards.

k. Cut secure thread on power cable. Remove power cable from drogue loop. Separate soft release loop, allowing drogue assembly swivel to become free.

NOTE

The droque double locking loop may be re-used upon satisfactory inspection.

CAUTION

When separating the packed drogue assembly from the sealed canopy care must be taken to prevent tearing the vacuum seal initiators.

l. Loosen Lark's head knot on sealed canopy bridle cords. Route packed drogue deployment bag through large loop on drogue bridle. Remove packed drogue deployment bag.

m. Pack Drogue per WP 028 05.

CAUTION

When separating the sealed canopy bridle cords from the sealed canopy assembly care must be taken to prevent tearing the vacuum seal initiators.

n. Loosen the Lark's head knot on sealed canopy bridle cord and remove.

o. Repeat step n for the remaining three sealed canopy bridle cords.

4. SURVIVAL COMPARTMENT OPENING/DISASSEMBLY.

a. Position harness/container on packing table with bottom edge of survival compartment facing packer.

b. Open top cover flap on survival compartment.

c. Place one hand over ripcord pin, with firm pressure. Place other hand pull on survival ripcord cable to remove ripcord pin from closing loop.

d. Remove survival kit release assembly (ripcord) from survival kit release ripcord housing assembly.

e. Open survival compartment flaps.

f. Disconnect yellow lanyard hook.

g. Remove Survival Equipment Kit/Liferaft Module and forward to appropriate work section for survival items inspection/maintenance and rigging, per NAVAIR 13-1-6.3-1.

h. Cut and remove Type I nylon cord securing emergency oxygen system (2 places) at green apple stowage-flute and lacing at O^2 bottle flap. Remove emergency oxygen system (CRU-109/P22P-20), and forward to appropriate work section for inspection/maintenance and rigging, per NAVAIR 13-1-6.4-1.

i. Remove and discard anti-slip pad from emergency oxygen system holder.

j. Remove and discard survival compartment closing loop.

5. INSPECTION OF SEALED CANOPY ASSEMBLY AND SEALED CANOPY BRIDLE CORDS.

a. Inspect replacement sealed canopy assembly vacuum bag for softness which would indicate loss of canopy vacuum seal. Do not remove red tape securing initiator cuts located next to 4 grommets until directed.

CAUTION

If initiator cuts are missing do not use sealed canopy assembly. Care must be taken when verifying the initiator cuts.

NOTE

If red tape pieces (s) are missing on initiator cuts, still use sealed canopy assembly but verify initiator cuts have been made in heat seal seam.

b. Carefully verify initiator cuts are present, (3) on top edge, (1) on bottom, "V" cut by looking on opposite side of red tape. Verify initiator cuts are present in the heat seal seam. (QA)

c. Inspect both steering handles for contamination, deterioration, cuts, fraying, and loose or broken stitching.

d. Inspect sealed canopy bridle cords for cuts, fraying, and loose or broken stitching.

6. REMOVAL OF STEERING HANDLE AND SOFT LINK RISER.

a. Cut and remove FF tackings (4 places per riser) that secures anti-rotation straps to the soft link assemblies (risers).

b. Remove anti-rotation clips from canopy release fittings.

c. Carefully lift and slide sealed canopy assembly to expose canopy ties (Figure 1).

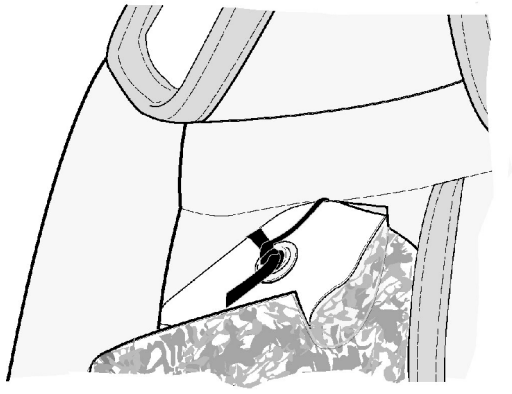

Figure 1. Canopy Ties

d. Cut tape, lacing and tying ties (2 places) located at the bottom corner loops of harness which secure the canopy assembly to the container. Remove cut ties.

e. Rotate sealed canopy assembly back and rest on survival compartment with information plate facing up.

f. Separate steering handle from pile fastener tape and remove steering line from stowage flutes on soft link riser.

g. Remove Lark's head knot from steering handle. Remove steering handle.

h. Remove steering line from steering line guide loop.

i. Remove Lark's head knot from steering line heat seal.

j. Repeat steps f thru i for opposite side.

k. Open cover securing Rapide link (Figure 2).

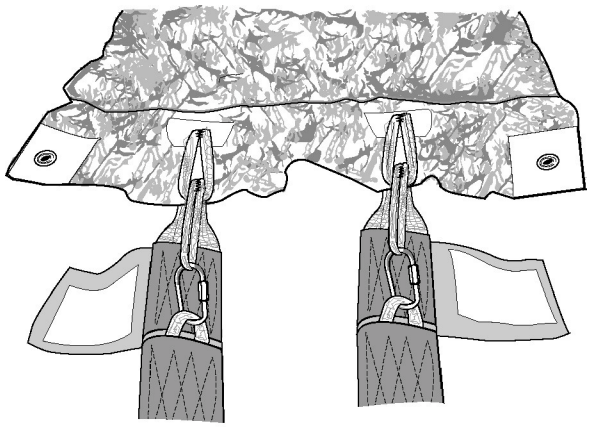

Figure 2. Rapide Links

l. Using 5/16-in. wrench, loosen the nut on Rapide link. Back off nut and remove small soft link from Rapide link. Leave Rapide link attached to Rapide link secure loop. Hand tighten Rapide links to prevent loss or damage to secure loops.

m. Repeat steps k and l for opposite side.

CAUTION

Care must be used when removing small soft link from rapide link. Rapide link nut must be backed off completely to prevent fraying or tearing of the small soft link.

n. Remove small soft link from large soft link. Slowly pull and remove large soft link from sealed canopy assembly hole.

o. Remove riser assembly from container.

p. Repeat steps n thru o for opposite side.

q. Remove sealed canopy assembly (PCU-68/P22P-20). Box it up and turn into supply for disposition.

r. Discard all old closing loops.

7. INSPECTION (SPECIAL).

a. Scheduled replacement of the PCU-68/P22P-20 Sealed Canopy Assembly is 1792 days.

8. SERVICE LIFE CHECK AND CONFIGURATION UPDATING.

NOTE

Unless otherwise noted, parachute component life shall start on the month of the date of manufacture and expire on the last day of that month.

a. All internal service life components, including cartridges, shall be replaced if service life expires prior to the next repack cycle. Repack cycles may be shortened to correspond to the first component that is expiring prior to the next inspection cycle. An external overage component (i.e. Universal Water Activated Release System) can be replaced without a parachute repack.

b. When replacing an external overage component without a parachute repack, draw a single red line through any information pertaining to that component on the Parachute Record (OPNAV 4790/101). The replacement component will be annotated on the next available line. The QA who witnessed the task shall apply the QA stamp to the right of the entry and complete the VIDS/MAF (OPNAV 4790/60).

c. A parachute assembly may be opened to permit compliance with a Technical Directive. After completion of directive, the parachute assembly repack cycle may be re-based if all parachute components have the necessary life available or may be returned with the original repack date in order to keep it aligned with the actual aircraft inspection cycle.

d. When a component reaches the service/total life limit, it shall be returned to supply for disposition.

e. If parts received from supply are lacking a date of manufacture and are new in manufacturer's packaging, they may be used for one complete repack cycle, then removed. Place "No Date of Manufacture" in the Date of manufacture's block on the Parachute Record (OPNAV 4790/101). Submission of a Quality Deficiency Report (QDR) shall follow each occurrence.

f. Check date placed in-service and date of manufacture on each parachute component for service life as follows:

Nomenclature	Total Life
Harness/Container Assembly	14 Years
Pilot Parachute Assembly	14 Years
Pilot Parachute Bridle Cord	14 Years
Sealed Canopy Bridle Cords	14 Years
Sealed Canopy Assembly	5 1/2 Years
Automatic Actuation Device	15 Years
UWARS	Refer to NAVAIR 11-100-1.1

(1) Check markings for completeness, legibility, and accuracy with information on parachute record. (QA)

(2) Compare configuration of parachute assembly to that shown on NAVAIR 13-1-6.2 Record of Applicable Technical Directives and Illustrated Parts Breakdown.

9. INSPECTION OF PILOT PARACHUTE AND PILOT PARACHUTE BRIDLE CORD.

a. Inspect fabric surfaces and seams for cuts, tears, burns, fraying, and loose or broken stitching.

b. Inspect seam area at crown for seam separation.

c. Inspect coil spring assembly for distortion, cracks, crimped ferrule secure, and corrosion.

d. Inspect loose or broken tackings at bottom of coil spring assembly.

e. Inspect pilot parachute bridle cord for cuts, fraying, loose or broken stitching.

10. INSPECTION OF CONTAINER.

a. Inspect webbing for contamination, rust at points of contact with metal parts, cuts, fading, wear, fraying, abrasions, and loose or broken stitching.

b. Inspect hardware for damage, cracks, or corrosion.

c. Inspect container fabric for seam separation, loose or broken stitching, cuts, tears, contamination, deterioration, and wear.

d. Inspect flap grommets for security of attachment, cracks, distortion and corrosion.

e. Inspect hook fastener on shoulder straps, and on parachute compartment flaps #1, #2, and #3 for loose or broken stitching.

f. Inspect canopy release assembly body for broken locking and actuating lever springs, corrosion, cracks and set screw and tamper dot are in place. Inspect the release level left and right arms for cracks.

g. Measure torque of knurled actuating lever as follows:

(1) Hold locking lever in open position and insert torque meter into either hexagonal cavity.

(2) Rotate actuating lever to point just prior to contact with body. The allowable torque is 28 to 50 in-oz. (QA)

h. Inspect elastic keepers (4 places) for deterioration.

11. INSPECTION OF SOFT LINK ASSEMBLY (RISER).

a. Inspect Rapide links for damage, corrosion, distortion and ease of operation.

b. Inspect soft link cords and Rapide link attachment loop for cuts, wear, fraying, and loose or broken stitching.

12. INSPECTION OF UNIVERSAL WATER ACTIVATED RELEASE SYSTEM (UWARS).

a. Refer to WP 029 01.

13. INSPECTION OF RIPCORD ASSEMBLY AND RIPCORD HOUSING.

a. Inspect cable for corrosion, distortion, fraying, broken strands, and security of swaged terminal ball.

b. Inspect locking pin for distortion or cracks.

c. Inspect ripcord handle for distortion, cracks, and corrosion.

d. Inspect ripcord handle clip for security of attachment to webbing, corrosion, distortion and cracks.

e. Inspect housing for corrosion, distortion, loose ferrules, breaks, and cracks.

f. Inspect ripcord housing for tacking on both ends.

14. INSPECTION OF CLOSING LOOP.

a. Inspect replacement small and large parachute closing loops for cuts, fraying, loose or broken stitching and washer is attached.

15. INSPECTION OF DROGUE LOOP.

a. Inspect drogue loop for cuts, fraying, and loose or broken stitching.

16. REMOVAL OF AUTOMATIC ACTUATION DEVICE (AAD).

NOTE

Test chamber must be turned on to permit 30 minute warm up period prior to testing AAD.

a. Cut and remove all lacing tape tackings (6 places) on AAD power and actuator cables and protective sleeves (Figure 3).

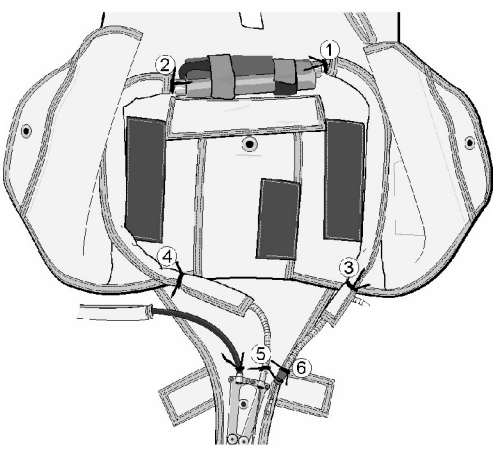

Figure 3. Lacing Tape Ties

b. Remove AAD power cable housing by removing screws on the AAD stiffener plate.

c. Separate hook and pile fastener tape which holds AAD body and cable housings.

d. Remove AAD.

17. AAD INSPECTION.

a. Inspect all threaded parts for crossed or damaged threads.

b. Inspect AAD body for damage, cracks, or corrosion.

c. Inspect both cables and cable housings for, bends, fraying, broken strands, and locking pin for bends or cracks, and security of swaged ball.

18. PREPARING AAD FOR TESTING (COCKED).

WARNING

Removal of components other than cables and cable housings may result in serious injury.

NOTE

AAD will be visually and functionally tested whenever parachute module is removed for repair or replacement.

a. Inspect AAD and all AAD components.

b. Remove the AAD power cable and housing by loosening and removing knurled cap. Install the test power cable with housing and bumper cushion installed onto test power cable into the AAD tighten knurled nut.

c. Place AAD into cocking fixture. Place power cable into cocking fixture cable. Pin with stud.

d. Apply tension to actuation cable by turning hand wheel until power cable is taunt, do not release hand pressure tension from hand wheel. Insure green dot fully appears in the indicator window.

NOTE

An audible "click" will be heard when the test arming cable is fully inserted.

e. Remove arming cable housing and arming cable by loosening and removing knurled cap, resistance will be felt when removing arming cable. Insert test arming cable. Insure test arming cable is seated properly into AAD.

f. Release tension from power cable, remove stud from fixture/power cable.

g. Remove AAD from cocking fixture.

19. PREPARING AAD FOR TESTING (FIRED).

WARNING

Removal of components other than cables and cable housings may result in serious injury.

NOTE

AAD will be visually and functionally tested whenever parachute module is removed for repair or replacement.

a. Inspect AAD and all AAD components.

b. Remove arming cable housing and arming cable by loosening and removing knurled cap.

c. Insert arming cable pin into arming cable pin adapter.

d. Apply tension to actuation cable by turning hand wheel until power cable is taunt, do not release hand pressure tension from hand wheel. Insure green dot fully appears in the indicator window.

e. Insert the test arming pin. Insure test arming pin is seated properly into AAD.

NOTE

An audible "click" will be heard when the test arming cable is fully inserted.

f. Release tension from power cable. Remove arming cable pin adapter from arming cable pin. Remove arming cable housing and arming cable by loosening and removing knurled cap.

g. Replace the power cable and housing with the test power cable and housing.

h. Install the bumper cushion between the test power cable ferrule and the test power cable terminal.

CAUTION

Bumper cushion must be used on the power cable to prevent possible damage to the release when firing without a load.

i. Remove the AAD from the cocking fixture.

20. TIME DELAY TEST SETUP.

CAUTION

Bumper cushion must be used on the power cable to prevent possible damage to the release when firing without a load.

a. Open test chamber door.

b. Insert AAD, label up, into fixture inside test chamber so that release body seats evenly within the cavity.

c. Wrap test power cable housing around mandrel and insert test power cable terminal into slot of power cable adapter.

d. Insert pin power cable retainer through holes in power cable adapter and test power cable terminal.

e. Place the test arming cable end ball terminal into slot on end of arming cylinder piston rod and secure with red rubber sleeve.

f. Close test chamber door.

21. PERFORMING TIME DELAY TEST.

a. Place time delay switch in "TEST" position. Time delay sequence begins automatically.

NOTE

The activation device must pass all three time delay tests.

b. When AAD activates, timer will lock at the reading. Acceptable readings are 2.0 ± 0.2 seconds. Record time delays on automatic opener test sheet. (QA)

c. After recording the test data, place the time delay switch to the "RESET" position. The timer will display "00.00" seconds.

d. Using cocking fixture, re-cock the AAD per Paragraph 18, steps c and d.

e. Repeat firing time delay test 2 additional times. The activation device must pass all three time delay tests. (QA)

22. PERFORMING ALTITUDE TEST.

a. Using the cocking fixture, re-cock the AAD.

b. Open test chamber door

c. Insert the release, label up, into the nest inside the test chamber such that the release body seats evenly within the nest cavity.

d. Wrap the test power cable housing around the mandrel and insert the test power cable terminal into the slot of the power cable adapter.

e. Insert the pin power cable retainer through holes in the power cable adapter and the test power cable terminal.

f. Place the test arming cable end ball terminal into the slot on the end of the arming cylinder piston rod and secure with the red rubber sleeve.

g. Close the test chamber door.

h. Slightly press down on the test chambers door.

i. Place the altitude switch in the "TEST" position.

j. The test chamber will automatically climb to 20,000 feet altitude and pull the test arming cable. It will then automatically descend.

k. Upon reaching the preset activation altitude, the AAD will activate, the altitude meter will lock at the activation altitude. The AAD must activate between 13,000 feet and 15,000 feet.

l. Record activation altitude on automatic opener test sheet. (QA)

m. Place switch in the "RESET" position.

n. Allow chamber to return to ambient pressure.

o. Repeat firing altitude test 2 additional times. The activation device must pass all three firing altitude tests. (QA)

23. REASSEMBLE AAD.

a. Place the fired test unit in the cocking fixture, and pin the test power cable terminal to the cocking fixture cable.

b. Turn the hand wheel counterclockwise to apply tension to the test power cable of the AAD. Maintain a steady pulling force until the unit reaches a complete stop. Maintain tension on the test power cable. Insert arming cable through arming cable housing. Insert arming cable pin into AAD housing until it locks into place. Finger tighten knurled cap. (QA)

NOTE

An audible "click" will be heard when the test arming cable is fully inserted.

c. Remove the test power cable, and test power housing by loosening knurled cap. Replace with AAD power cable and power cable housing, and finger tighten knurled cap. Release tension. Remove AAD from cocking fixture.

d. Remove test power cable. Replace with AAD power cable pin and cable housing. Finger tighten knurled cap. (QA)

24. INSTALLATION OF AAD.

a. Position AAD in bottom of parachute compartment and orient power cable to right and arming cable to left (Figure 4).

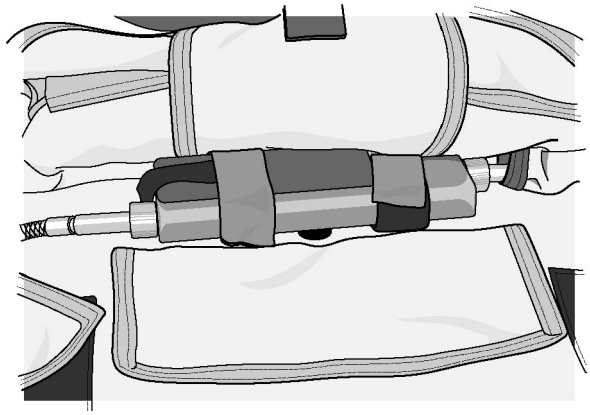

Figure 4. AAD Mounting

b. Separate fastener tape on housing channel covers and position power cable and arming cable into each housing channel and secure fastener tape around each housing.

c. Ensure AAD Aneroid and Arming indicators are visible through view ports in back of container. (QA)

d. Secure AAD body in place with fastener tape at bottom of pack tray.

e. Secure AAD cable housings in there respective channels with a series of 6 lacing tape ties in the following sequence (Figure 5).

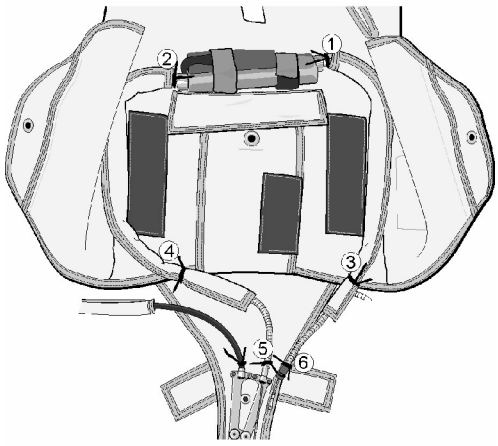

Figure 5. Lacing Tape Ties

NOTE

All lacing tape ties are to be one turn, single, surgeons knot followed by a square knot, unless directed otherwise. Placement of the tackings are shown in Figure 5.

(1) Arming cable housing lower pack tray tacking.

(2) Power cable housing lower pack tray tacking.

(3) Arming cable housing upper pack tray tacking.

(4) Power cable housing upper pack tray tacking.

(5) Power cable housing tacking under closing flap #3.

(6) Tack arming cable housing retention loop with 3 turns lacing tape, followed by a surgeons knot followed by a square knot. Trim excess from all ties to 1/2-in.

f. Inspect all lacing tape ties for proper knots and location. (QA)

g. Ensure AAD Aneroid and Arming indicators are visible through view ports in back of container.

25. INSTALLATION OF LEFT SOFT LINK RISER.

a. Attach pack retention clip to canopy release fitting.

b. Mate riser to fastener tape at shoulder pad. Riser, UWARS and canopy release will lie flat on table with no bends.

NOTE

Tie off all tackings with a surgeons knot followed with a square knot, followed by a binder knot leaving 1/2-in.

c. Tack risers to anti rotation strap in 4 places with 1 turn single FF thread waxed (Figure 6).

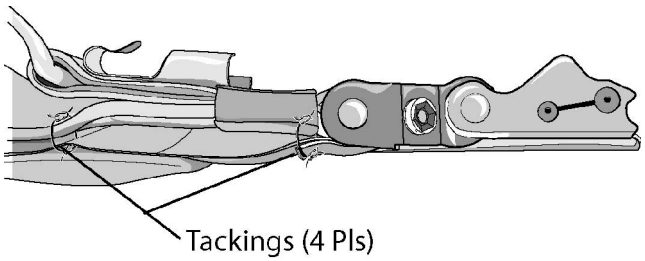

Figure 6. Anti-Rotation Strap Tackings

26. INSTALLATION OF RIPCORD.

a. Slide ripcord cable through ripcord housing located on left riser.

b. Install ripcord handle into ripcord clip.

27. INSTALLATION OF RIGHT SOFT LINK RISER.

a. Repeat steps 25.a thru 25.c on right riser.

b. Stand module on end and allow risers to hang naturally.

c. Mate risers to fastener tape in bottom of container.

d. Orient container flat on table for packing.

28. INSTALLATION OF MANUAL OVERRIDE (MOR) HANDLE.

a. Slide MOR handle cable through MOR handle cable housing.

b. Insert MOR handle into MOR handle retaining clip.

c. Safety tie, MOR handle to inertia reel webbing loop, outboard side on the right riser. Pass through webbing loop using one turn single, waxed, nylon, E thread. Tie off with a surgeon's knot, followed by a square knot.

d. Insert MOR handle into pocket provided on backside of MOR handle cover.

e. Attach MOR handle cover by mating up hook fastener tape to pile fastener tape located on the back of right riser.

29. SEALED MODULE PREPARATION.

a. Place sealed canopy assembly on table with the top folds up. Name plate down.

b. Soft link riser attachment holes shall be oriented so they are facing to the left of the packer and to the right of the helper.

CAUTION

When attaching the sealed canopy bridle cords to the sealed canopy assembly care must be taken to prevent tearing the vacuum seal initiators.

c. Route the small loop of the sealed canopy bridle cord up through the grommets of the vacuum bag. Route the large loop of the cord through the small loop, forming a Lark's head knot around the vacuum bag. Repeat this on the other 3 grommets on the vacuum bag (Figure 7).

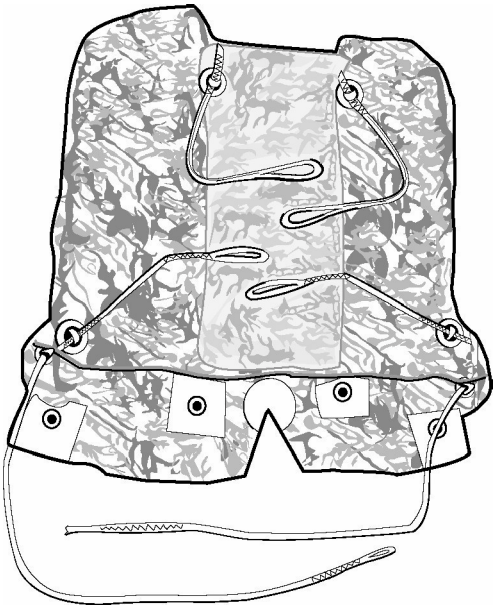

Figure 7. Sealed Canopy Module

d. Route the steering handle attachment cord up through the heat seals which are placed below the bottom initiator heat seals (Figure 7).

e. Pass the steering handle attachment cord up through the loop forming a Lark's head knot around the heat seal.

30. CONNECTING SOFT LINKS TO RISERS.

a. Carefully lift module from table, bridle cords facing down information label facing up with riser attachment holes to packers left.

b. Place module on top of survival compartment. Helper shall maintain control of module.

c. Pass large soft link through soft link riser attachment holes. Pass small riser soft link loop through large soft link loop, route small riser soft link loop onto rapide link (Figure 8).

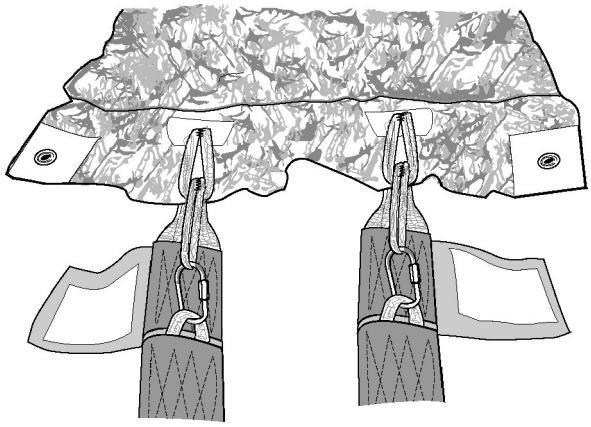

Figure 8. Attachment of Risers Module

d. Tighten barrel nuts until no threads are exposed.

e. Torque barrel nuts to 10 in-lbs. ± 2 in-lbs. (QA)

f. Apply torque seal to rapide link barrel nut. Allow to dry. Close cover over rapid links.

g. Route steering line through steering line guide loops on each riser soft link and then route through each respective steering handle. Route steering handle through steering line loop forming a Lark's head knot.

h. Secure steering handle to riser by mating fastener tape.

i. Fold excess steering line. Using bodkin and 100 lb. stow excess in riser flutes.

31. INSTALLATION OF SEALED CANOPY ASSEMBLY.

a. Mate risers to fastener tape in bottom of container.

b. Carefully place sealed canopy assembly into container compartment information label facing down.

c. Cut two 36-in. pieces of lacing tape. Route one 36-in. piece of lacing tape doubled, through each of the two parachute attachment loops located at the bottom of the parachute compartment (Figure 9).

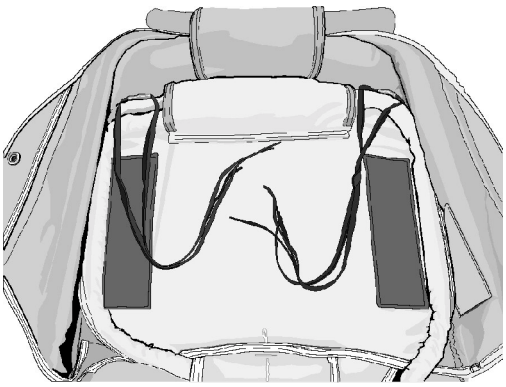

Figure 9. Routing of Lacing Tape

d. Route one end of the doubled nylon lacing tape back through tack loop and then back through grommet, forming two turns of doubled lacing tape. Tie off with a surgeon's knot, followed by a square knot. Loop should be approximately the size of a 50 cent piece (Figures 10 and 11).

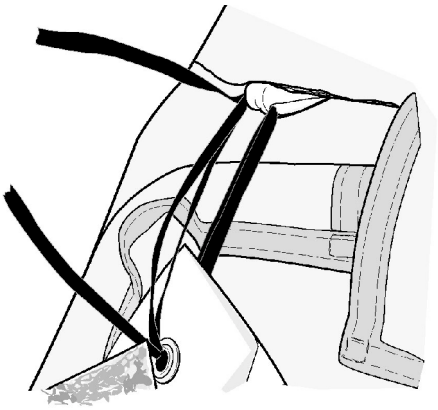

Figure 10. Sealed Canopy Tie

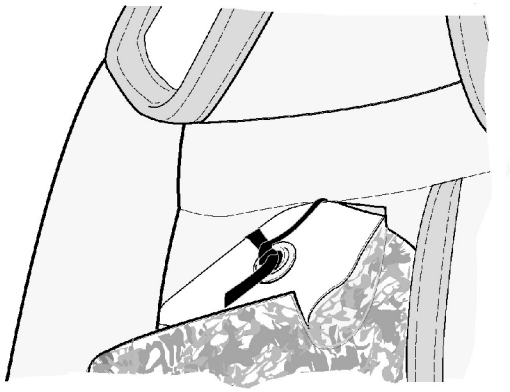

Figure 11. Complete Ties

e. Repeat steps for other side.

f. Remove initiator tapes from all sealed parachute module.

g. Carefully position canopy assembly into lower corners of parachute compartment.

32. INSTALLATION OF CLOSING LOOPS.

a. Install 4 1/2-in. closing loop thru grommet in flap number 1. Install through grommet furthest to the left from packer side.

b. Install 1/2-in. closing loop thru remaining grommet in flap number 1.

c. Install 3/4-in. loop into flap number 2. Install through grommet furthest to the right from packer side.

33. CONNECTING DROGUE ASSEMBLY AND PILOT PARACHUTE.

a. Pack Drogue Chute Assembly per WP 028 05.

b. Attach the Drogue Chute Riser to the sealed canopy bridle cords as follows:

(1) Pass the drogue riser's large loop through the four sealed canopy bridle cord loops starting with the top right and continuing clockwise.

(2) Pass the packed drogue through the drogue riser's large loop.

(3) Pull the drogue riser snug into a Lark's head knot.

(4) Route drogue riser toward lower right side of sealed module (Figure 12).

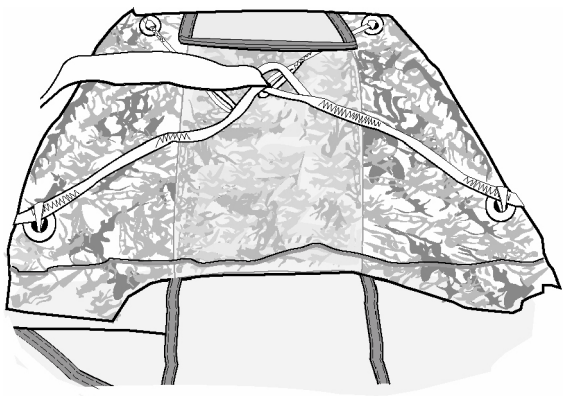

Figure 12. Routing of Drogue Bridle

c. Connect the pilot chute to the drogue bag deployment bag as follows:

(1) Pass the pilot parachute bridle cord's small loop through the attachment loop of the drogue deployment bag.

(2) Pass the cord's large loop end through its small loop and pull it snug into a Lark's head knot.

(3) Pass the pilot parachute bridle cord's large loop end through the pilot chute's attachment loop. Route pilot chute crown through large loop. Continue pulling pilot chute through loop. Pull attachment cord snug, forming Lark's head knot (Figure 13).

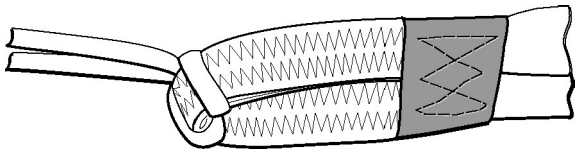

Figure 13. Pilot Parachute Bridle to Pilot Parachute Attachment

34. CLOSING PILOT PARACHUTE LAUNCH FLAPS.

a. Insert pull-up cords through each of the 1/2-in. and 3/4-in. closing loops. Insert a length of 750 lb. spectra/microline through 4 1/2-in. closing loop. Ensure MOR cable housing is routed over right top edge of module (Figure 14). (QA)

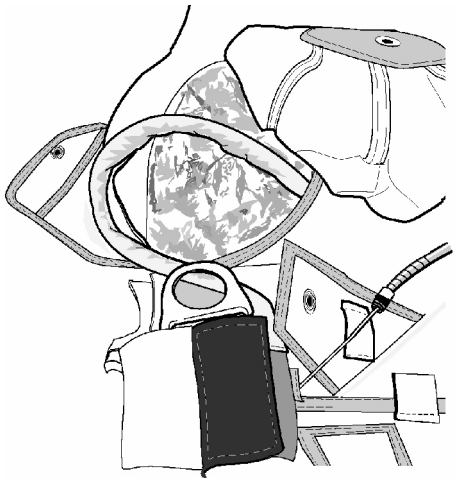

Figure 14. Routing of MOR Housing

b. Route pull-up cord of short closing loop located on flap number 1 through center grommet of closing launch flap #2.

c. Route pull-up cord of long closing loop through grommet left of center grommet of closing launch flap #2 (Figure 15).

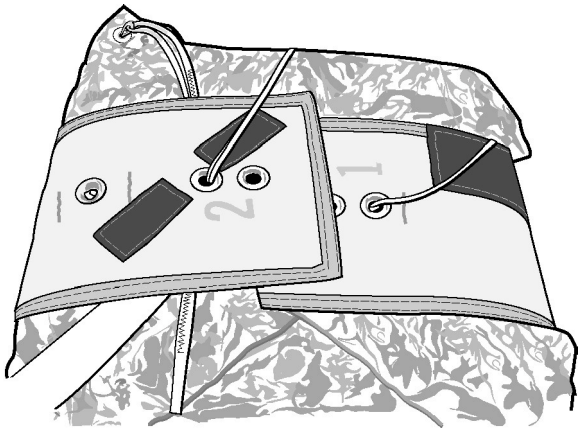

Figure 15. Closing Loop Placement

d. Pull small loop through corresponding grommet of flap #2 and secure with the curved pin located on drogue attachment bridle. Remove pull-up cord from closing loop after curved pin is installed (Figure 16). (QA)

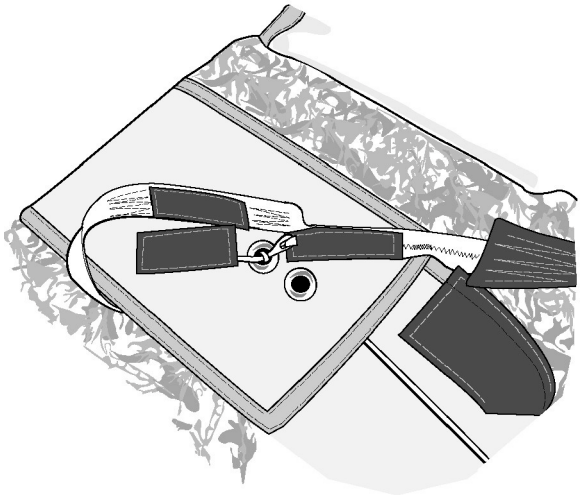

Figure 16. Routing of Drogue Bridle Curved Pin

e. Using one turn E thread, route through eye of curved pin and around closing loop. Tie off with a surgeon's knot, followed by a square knot (Figure 17).

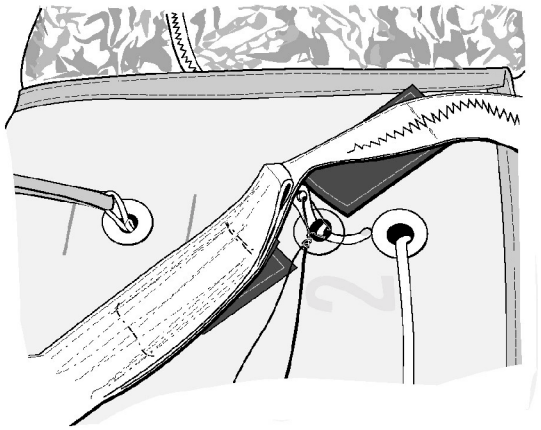

Figure 17. Safety Tie of Curved Pin

f. Attach the drogue bridle to the flap by engaging the fastener tape in three places.

g. Pull swivel protective sleeve inside out.

h. Fold bridle between swivel and protective sleeve, forming 1 1/2-in. bight, tack with 1 turn single nylon E thread. Tie off with a surgeon's knot, followed by a square knot.

i. Pull bridle to ensure there are no twists, align and mate fastener tape. Fold and move swivel back toward fastener tape at 45 degree angle and tack with single turn E thread. Tie off with a surgeon's knot, followed by a square knot. Attach bridle to tab by engaging fastener tape (Figure 18).

Figure 18. Routing of Large Loop/Engaging Tab to Fastener Tape

35. CONNECTING SWIVEL RELEASE ASSEMBLY.

a. Route drogue double locking loop up through AAD power cable grommet on flap #3. Pin one end with power cable pin.

b. Route the soft release's large loop through the swivel's large ring (Figure 18).

c. Route the release's mid-size loop through its large loop and fold it over/around the large loop (Figure 19).

Figure 19. Routing of Midsize Loop

d. Route the release's small loop through its mid-size loop and fold it over/around the mid-size loop (Figure 20).

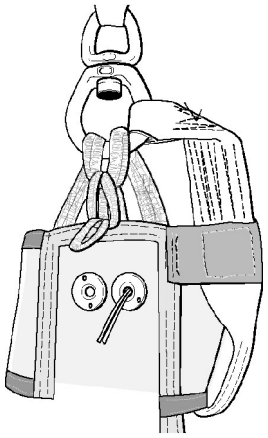

Figure 20. Routing of Small Size Loop

e. Route free end of double locking loop through the release's small loop and down through MOR grommet. Secure loop by inserting manual drogue release pin through eye of loop. Remove all packing aids from the double locking loop on drogue riser (Figure 21).

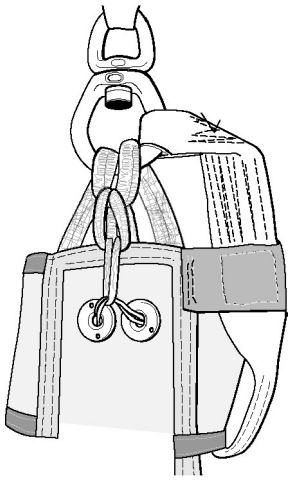

Figure 21. Routing of Double Locking Loop

f. Seat pin approximately 7/8-in. past closing loop.

g. Safety tie the terminal pin on power cable and MOR cable using one turn nylon size A, three half-hitches followed by an overhand knot (Figure 22).

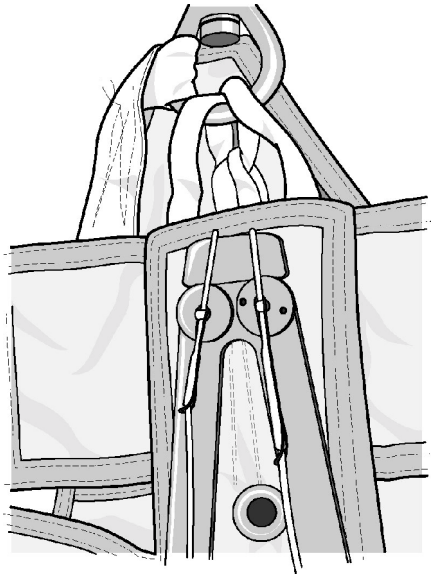

Figure 22. Safety Ties

h. Fold/close the flaps over both manual override release cable, AAD power cable pin and engage the fastener tapes.

i. Check drogue bridle for orientation of drogue bridle arming loop. Loop should be orientated toward packing table.

j. Pull swivel protective sleeve down over swivel assembly and slide over end of flap #3 (Figure 23).

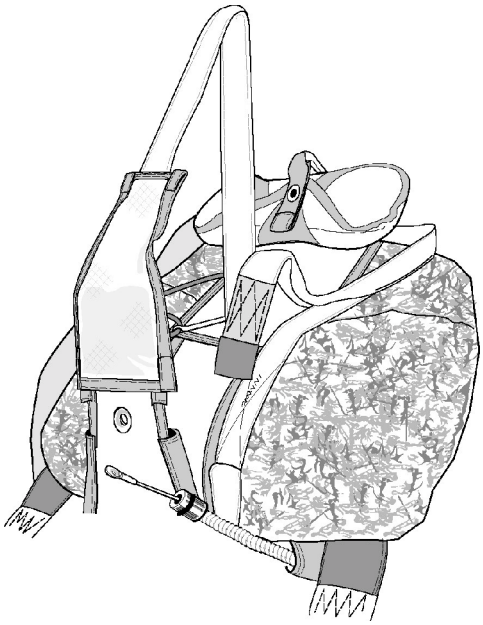

Figure 23. Swivel Protective Sleeve

k. Tack swivel protective sleeve to flap #3 on the outboard side (opposite side of pins), approximately 1/2-in. to 1-in. from grommet with one turn single size E thread. Tack through the outboard fabric layer. Tie off with a surgeon's knot, followed by a square knot (Figure 24).

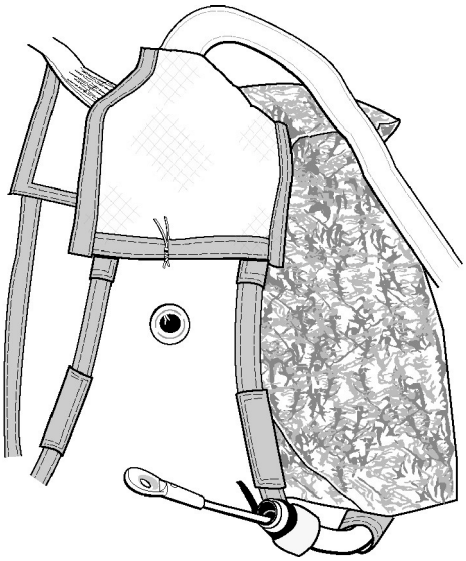

Figure 24. Sleeve Tacking

36. STOWING DROGUE PARACHUTE.

a. Neatly stow bridle between flaps #1 and #3.

NOTE

Ensure that the drogue attachment bridle is underneath the arming cable eye to prevent entrapment of the attachment bridle.

b. Route pull-up cord of main closing loop through grommet on flap #3 and secure with temporary locking pin.

c. Attach arming cable eye to drogue bridle arming loop with 2 turns single Type III gutted 550-lb nylon cord, ensuring that the drogue attachment bridle is underneath the arming cable eye. Route one end of a length of 550-lb nylon cord through arming cable loop, through eye of arming cable, back through arming cable loop, back through eye of arming cable, and finally back through arming cable loop. Tie off around drogue bridle arming loop with a surgeon's knot, followed by a square knot, followed by an overhand knot (Figure 25).

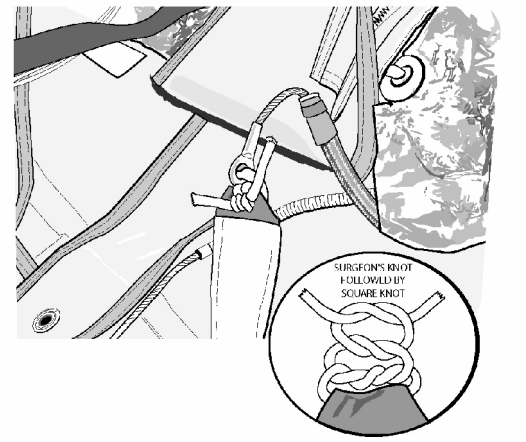

Figure 25. Arming Cable Tie

d. Position drogue release flap to the right of the curved pin.

e. Position drogue on flap #6 with stowage flutes facing up.

f. Fold excess drogue bridle under bridle tacked at AAD arming cable attachment to the left of flap #3 (Figure 26).

Figure 26. Closing Flap 3

g. S-fold the drogue riser left to right the width of the pilot chute launch flap #2 and stow it on top of the launch flap #2 at the bottom of the compartment.

h. Set drogue bag on flap #2 with line stows down.

i. Fold over pilot chute bridle (right side) to locking stow side of deployment bag. Fold top grommet of drogue bag under.

j. Thread pull-up cord through drogue deployment bag grommets and pull up closing loop and secure with curved pin on the pilot chute bridle.

k. Safety tie curved pin with one turn single E thread through eye of the curved pin and around closing loop. Tie off with a surgeon's knot, followed by a square knot, followed by an overhand knot.

l. Remove pull-up cord.

m. Ensure bottom of drogue bag is even with bottom of parachute compartment.

37. COMPRESSING PILOT PARACHUTE.

a. Insert long bodkin through grommet on pilot chute crown. Ensure that material is not trapped by bodkin (Figure 27).

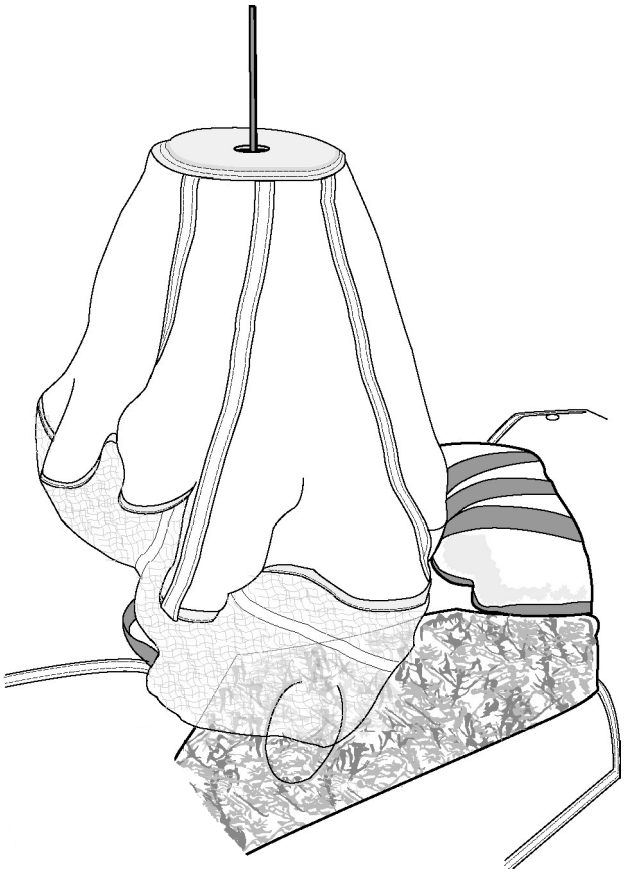

Figure 27. Compressing Pilot Parachute

b. Pass 4 1/2-in. closing loop pull-up cord up through pilot parachute.

CAUTION

Ensure bodkin is routed through center of pilot parachute spring.

c. Position pilot parachute over grommet on flap #3 with pilot chute attachment loop, exiting base of pilot chute at right side of container.

d. Compress pilot parachute and insert temporary locking pin.

e. S-fold the pilot chute bridle on the launch flaps on the right side of flaps #2 and #3.

f. Remove material from spring coil and spread out.

g. Neatly arrange material around crown.

h. Starting at the top, fold pilot chute netting and canopy around pilot chute crown. Fold canopy and netting along sides of crown to the width of the drogue deployment bag. Stow in indentation between drogue and pilot chute crown (Figure 28).

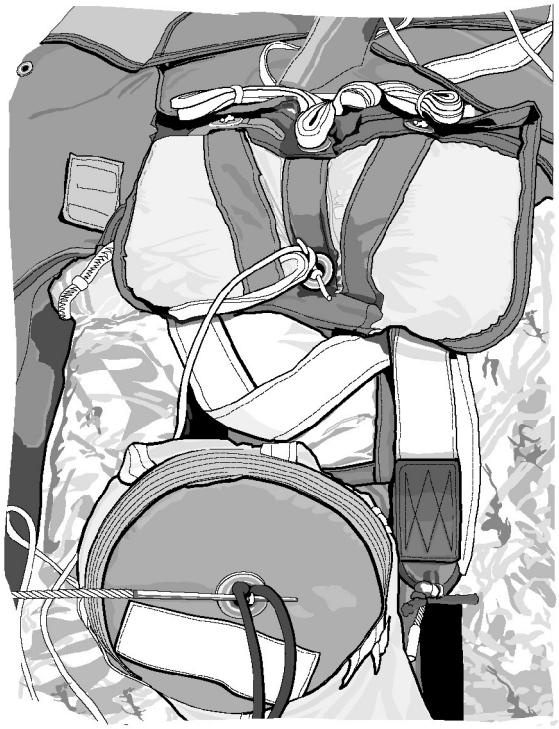

Figure 28. Pilot Parachute Placement

i. Take pilot chute bridle cord, S-fold and position it on right side of launch flaps 2 and 3, if necessary.

38. CLOSING CONTAINER ASSEMBLY.

a. Ensure MOR handle cable and housing is stowed over top edge of sealed canopy module.

b. Route pull-up cord through grommet on flap #4, and insert temporary pin.

c. Route pull-up cord through grommet on flap #5. Route excess MOR cable and housing under flap #5.

d. Wrap pull-up cord around T-handle and pull closing loop up through grommet on flaps and insert temporary locking pin.

CAUTION

Ensure pilot chute fabric is not trapped between closing flaps.

e. Route pull-up cord through grommet on flap #6.

f. Route pull-up cord through grommet on flap #6 and pull closing loop up through grommet on flap and insert temporary locking pin.

g. Route pull-up cord through grommet on flap #7. Route pull-up cord through hole in teflon washer. Pull closing loop up through grommet on flap.

h. Position closing plate centered over grommet on flap #7. Slot of plate will face top of parachute container.

i. Wrap pull-up cord around T-handle. Pull closing loop up through grommet teflon washer, and insert main ripcord pin at least three quarters seated in the closing loop.

j. Do not remove pull-up cord at this time.

k. Ensure ripcord housing runs along closing flap #3 and lays outboard at tacking loop (Figure 29).

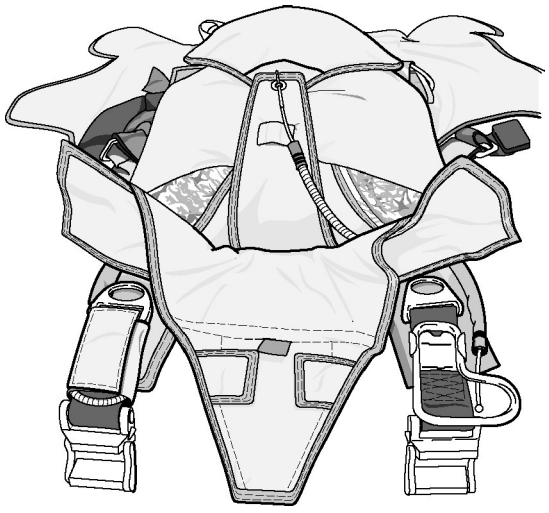

Figure 29. Closing Flaps 6 and 7

39. MAIN RIPCORD PIN PULL TEST.

a. Without removing pull-up cord, secure to ripcord cable with 3-4 half-hitches. This will reduce the chance of the ripcord pin being fully removed during the ripcord pin pull force checks (Figure 30).

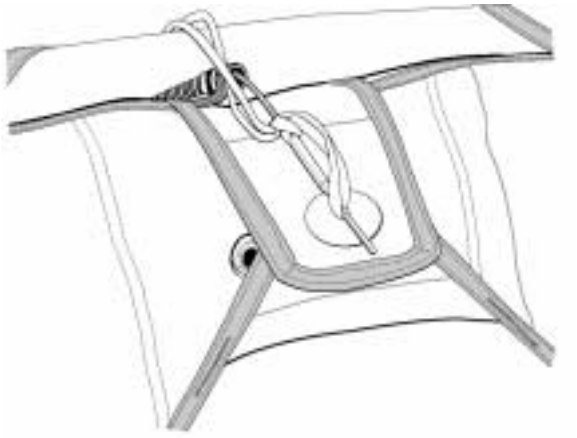

Figure 30. Routing of Pull-Up Cord

b. Set spring tester to zero.

c. Ensure ripcord grip is fully seated in ripcord grip retainer. Attach spring scale to ripcord grip using nylon cord. Using a straight steady pull, remove grip from retainer. Force required shall be 15 ± 5 lbs.

d. If pull force is not within limits, use pliers to adjust ripcord grip retainer. Ensure jaws of pliers are covered with protective material to prevent gouging. After adjustment, repeat ripcord grip pull test.

e. Reset scale to zero. Apply a straight steady pull on ripcord grip until initial movement of ripcord pin is observed. Maximum allowable force is 27 lbs. (QA)

f. Remove pull-up cord. (QA)

g. Stow ripcord grip in ripcord grip retainer.

h. Reposition ripcord pin so it is at least three quarters seated in the closing loop.

i. Insert center tuck tab on flap #8 into center keeper on flap #7.

j. Engage tuck tabs on flap #8 under flap #7.

k. Insert flap #8 into slot on flap #6.

l. Secure top flaps of flap #8 by engaging fastener tape located under back pad assembly.

40. FINAL CHECK.

a. Account for all packing tools.

b. Inspect packed A/P22P-20 Crew Backpack Assembly for general condition.

c. Packer shall complete and sign Parachute Record (OPNAV 4790/101). (QA)

d. QA inspector shall examine completeness and accuracy of all entries on Parachute Record (OPNAV 4790/101).

e. QA inspector shall sign Parachute Record (OPNAV 4790/101).

f. Send a (legible) copy of new Parachute Record to: Commander, Code 461000D, NAVAIRWARCENWPNDIV, 1900 N Knox Road Stop 6206, China Lake, CA 93555-6106.

INTERMEDIATE AND DEPOT MAINTENANCE

FINAL CLOSING PROCEDURES A/P22P-20 CREW BACKPACK

SURVIVAL EQUIPMENT COMPARTMENT

PART NO. 3516AS2000-1

List of Effective Work Package Pages

Page No.	Chg. No.	Page No.	Chg. No.	Page No.	Chg. No.	Page No.	Chg. No.
1 thru 2	11	3 thru 5	10				

Reference Material

Organizational, Intermediate and Depot Maintenance, Parachute Loft Requirements/Administration ..... WP 003 00
Organizational, Intermediate and Depot Maintenance, Support Equipment ..... WP 005 00

Alphabetical Index

Title	Page
Final Check	5
Final Closing	4
General	2
Installation of Oxygen Bottle	2
Installation of Survival Equipment Release Ripcord	2
Installation of Survival Kit/Liferaft	3
Preliminary Procedures	2
Ripcord Pin Pull Test	5

Record of Applicable Technical Directives

None

1. GENERAL.

a. This Work Package (WP) provides instructions for the final closing of the Survival Equipment Compartment of the A/P22P-20 Crew Backpack Assembly.

b. Packing instructions are provided with the assumption that they will be carried out under ideal conditions in a parachute loft the packer should refer to WP 003 00 for any additional parachute loft requirements and administration instructions. When an assembly must be packed under unfavorable conditions, provisions must be made to protect it from possible damage and excessive humidity.

c. When performing scheduled maintenance, a component that will not make the next scheduled repack cycle shall be replaced.

d. Quality Assurance (QA) points are included in the packing procedures. When a procedural step is followed by (QA), a quality assurance requirement exists. Witnessing of the QA step may be delayed by QA, if their satisfactory completion is verified in a later step.

2. PRELIMINARY PROCEDURES.

Support Equipment Required

Part Number	Nomenclature
DPP-50	Tester, Spring Resiliency
Refer to WP 005 00	Roll Bar
1979AS950-1	Closing Plate
—	(2) CYPRES Closing Pins
—	Needle, Sewing Curved
—	Scissors
—	Ruler, 12-in.
—	Pull-up Cord, Gutted, 550 lb
PIA-C-5040	Cord, Nylon, Type I or IA
—	Bodkin

Materials Required

Specification or Part Number	Nomenclature
A-A-52080-B-2	Tape, Lacing & Tying, Finish B, Size 2, Type I, Natural
V-T-295	Thread, Nylon Type I or II, Class A, Size E
3516AS2020-9	Set, Closing Loop (See Note)

NOTE

3516AS2020-9 consists of the following (4) closing loops: 4 1/2-in. final closing loop, 3 1/2-in. survival kit closing loop, 3/4-in. drogue attachment loop, and the 1/2-in. inside flap closing loop.

3. INSTALLATION OF SURVIVAL EQUIPMENT RELEASE RIPCORD.

a. Install Survival container beaded ripcord cable into cable housing and attach release handle to pile fastener tape on webbing (Figure 1).

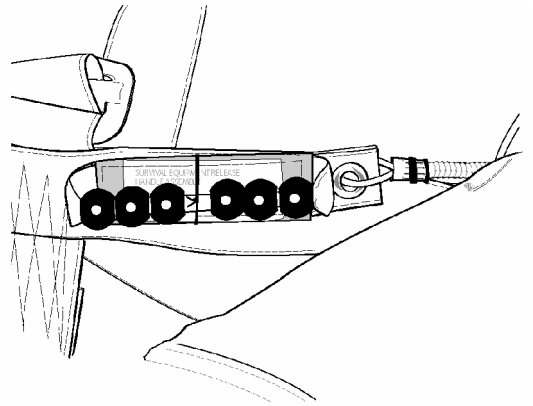

Figure 1. Tying Beaded Handle/Securing Handle to Fastener Tape

b. Tie beaded handle together by splitting beads so there are 3 on each side. Pass one turn single E thread around beaded part and base of handle and tie off a surgeon's knot, followed by a square knot, followed by an overhand knot. Trim excess (Figure 1).

4. INSTALLATION OF OXYGEN BOTTLE.

a. Ensure oxygen cylinder is charged prior to installation into the harness container assembly. (QA)

b. Install green apple through hole in right container flap #3 (Figure 2).

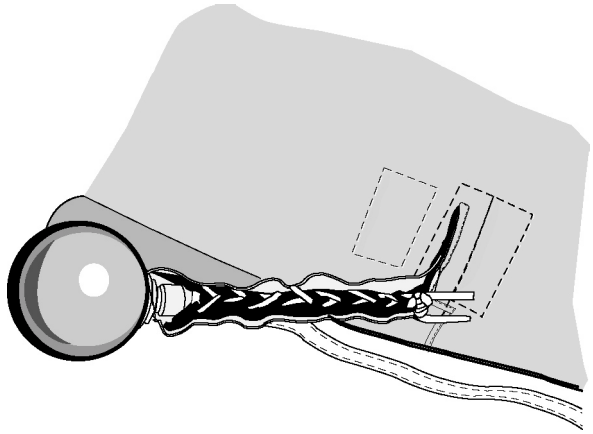

Figure 2. Green Apple Through Hole/Lacing Stowage Flute

c. Position and install 5-in. by 10-in. foam padding in oxygen compartment between oxygen cylinder and lacing flaps.

d. Position and install the oxygen cylinder in the lower compartment of the harness container assembly (Figure 3).

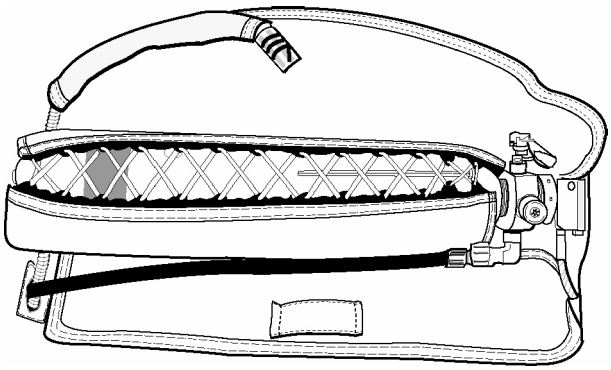

Figure 3. Lacing O2 Bottle

NOTE

The oxygen cylinder's indicator gauge must line up with the view port in the harness/container assembly to be installed correctly. Ensure elbow fitting routes to channel.

e. Ensure oxygen gage can be visually inspected through oxygen view port. (QA)

f. Close the flap over the cylinder. Using 80 inches of Type I or IA nylon cord, lace flaps together through every other eye of lacing webbing. Tie off with a surgeon's knot, followed by a square knot, followed by an overhand knot. Cut off excess cord 3 inches from overhand knot, using bodkin stow excess under lacing (Figure 3). (QA)

g. Route green apple cable housing into stowage flute. Start lacing stowage flute flaps together at the green apple end and work toward container using a 30-in. piece of Type I nylon cord. Tie off with a surgeon's knot, followed by a square knot, followed by an overhand knot. Cut off excess cord 1/2-in. from overhand knot (Figure 2).

h. Route oxygen hose along bottom of oxygen cylinder between cylinders flap and container equipment flap #1. Oxygen hose shall exit hole in left survival equipment container flap #2. Oxygen hose shall be routed over survival equipment ripcord cable housing. (QA)

i. Pass end of oxygen hose through hose stowage loop on the harness connection strap (Figure 4).

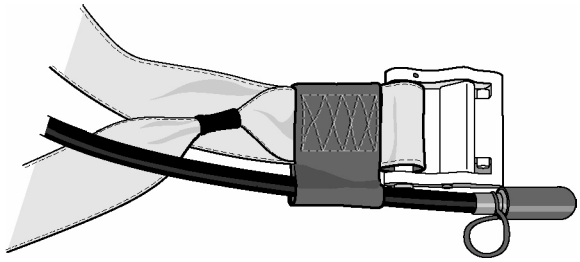

Figure 4. Stowage Hose into Loop

j. Lift cover on oxygen valve, verify toggle is fully seated and close cover. (QA)

5. INSTALLATION OF SURVIVAL KIT/LIFERAFT.

a. Discard old closing loop. Install new 3 1/2-in. closing loop in flap #1.

b. Position the harness/container assembly so that its bottom faces the packer.

c. Position the survival kit in the lower compartment of the harness/container with its locking loop facing up, and the survival kit handles toward the oxygen bottle. Ensure red retainer hook is routed over the top of the carry handles. Attach snap hook to survival kit retaining lanyard ring (Figure 5).

d. S-fold excess survival kit retaining lanyard in bottom of container at the bottle flap end.

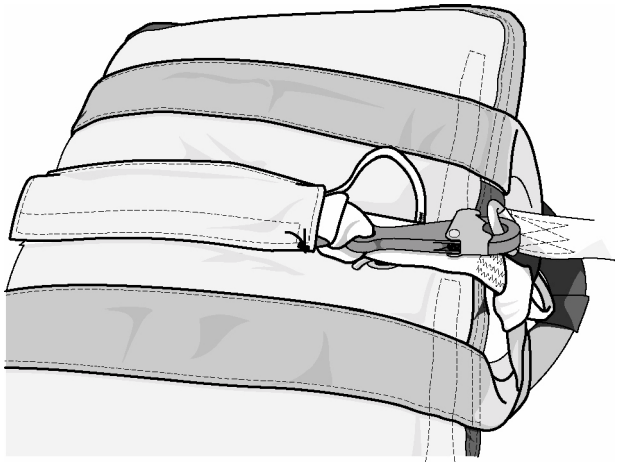

Figure 5. Attaching Snap Hook to Retaining Ring

e. Fold the survival kit's handles over the top of its carry bag.

f. Route pull-up cord through the locking loop.

g. Position retaining lanyard Lark's head to the left on the carry handle and red retainer hook to the left of the grommet. Align grommets in the kit and using a bodkin pass through both grommets, route the pull-up cord up through the grommets. Pull up and secure with a CYPRES locking pin (Figure 6). (QA)

h. Close bottom left and right flaps by routing temporary locking loop (550 cord with a 3/4-in. bowline loop tied in one end) down through bowline loop and route pull up cord through right flap grommet pull up through grommet and secure with cypress locking pin. Remove pull-up cord from bowline loop at right flap (Figure 7).

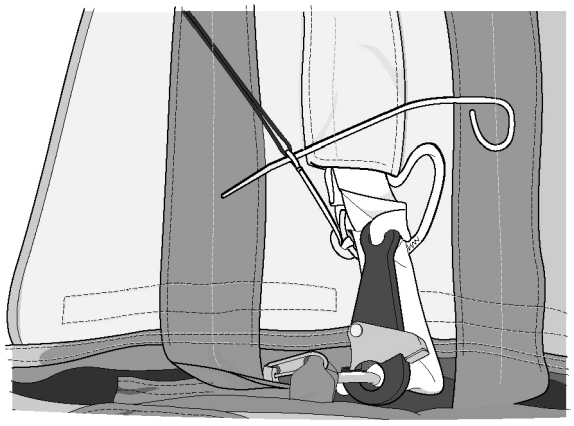

Figure 6. Routing Locking Loop

6. FINAL CLOSING.

a. Close bottom left and right flaps by routing temporary locking loop (550 lbs. with a 3/4-in. overhand loop tied in one end) through left flap grommet. Route loop through right flap grommet and secure with CYPRES locking pin (Figure 7).

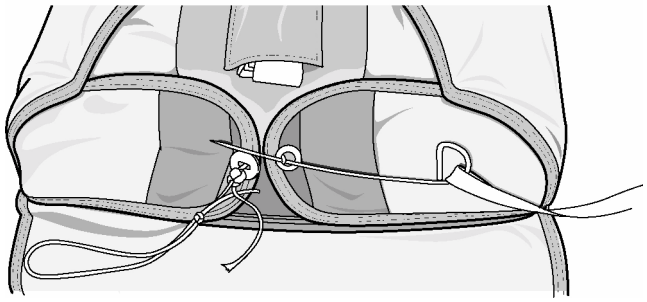

Figure 7. Securing Locking Loops on Flaps 2 and 3

b. Route pull-up cord through grommets in side flaps 2 & 3. Close flaps and secure with CYPRES locking pin.

c. Route pull-up cord through grommet in bottom flap #4.

d. Close flap and secure with CYPRES locking pin.

e. Route pull-up cord through grommet in top flap #5.

f. Close flap using closing plate and roll bar and insert ripcord pin through closing loop. Seat the ripcord pin until the tip is 1/2-in. ($\pm$1/16) beyond the outer edge of the grommet (Figure 8).

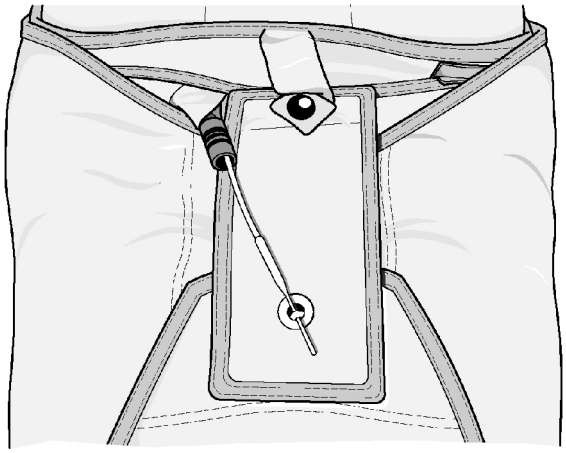

Figure 8. Ripcord Pin Through Closing Loop

g. Remove the CYPRES locking pin and temporary locking loop from the bottom side closing flaps. (QA)

h. Remove pull-up cord. (QA)

7. RIPCORD PIN PULL TEST.

a. Set spring tester to zero.

b. Place assembly flat on table. Ensure beaded handle is removed from hook fastener tape located on container strap, position so that the beaded handle lays flat and faces up.

c. Attach the force gauge to the handle so that an even load is applied on the handle.

d. Apply a straight steady pull on the ripcord handle until initial movement of the ripcord terminal pin is observed. Maximum allowable force is 27 lbs.

e. Reset the terminal pin until the tip is 1/2-in. (±1/16) beyond the outer edge of the grommet.

f. Ensure that all flaps are tucked in.

g. Close the top outer flap over the inner top flap and secure it by engaging the tuck flaps.

8. FINAL CHECK.

a. Account for all packing tools. (QA)

b. Inspect packed A/P22P-20 Crew Backpack Assembly for general condition. (QA)

c. Packer shall complete and sign Parachute Record (OPNAV 4790/101). (QA)

d. QA inspector shall examine completeness and accuracy of all entries on Parachute Record (OPNAV 4790/101).

e. QA inspector shall sign Parachute Record (OPNAV 4790/101).

f. Send a (legible) copy of new Parachute Record to: Commander, Code 461000D, NAVAIRWARCENWPNDIV, 1900 N Knox Road Stop 6206, China Lake, CA 93555-6106.

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ORGANIZATIONAL, INTERMEDIATE AND DEPOT MAINTENANCE

ILLUSTRATED PARTS BREAKDOWN

A/P22P-20 CREW BACKPACK ASSEMBLY

PART NO. 3516AS2000-1

List of Effective Work Package Pages

Page No.	Chg. No.	Page No.	Chg. No.	Page No.	Chg. No.	Page No.	Chg. No.
1 thru 10	11						

Reference Material

Intermediate and Depot Maintenance, Packing Procedures, PCU-69/P22P-20 Drogue Assembly . . . . . WP 028 02

Alphabetical Index

Title	Page
Introduction	1
Service/Total Life	1
Usable On Codes	1

List of Figures

Title	Page
A/P22P-20 Crew Backpack Assembly	2

Record of Applicable Technical Directives

None

1. INTRODUCTION.

a. This Work Package (WP) contains information for ordering and identifying parts for the A/P22P-20 Crew Backpack Assembly (Figure 1).

2. USABLE ON CODES.

a. The usable on codes in this WP refer to the aircraft applications for the A/P22P-20 Crew Backpack Assembly.

b. The following usable on codes apply to this WP:

A - E-2C

3. SERVICE/TOTAL LIFE.

a. The service/total life information is contained in WP 028 02.

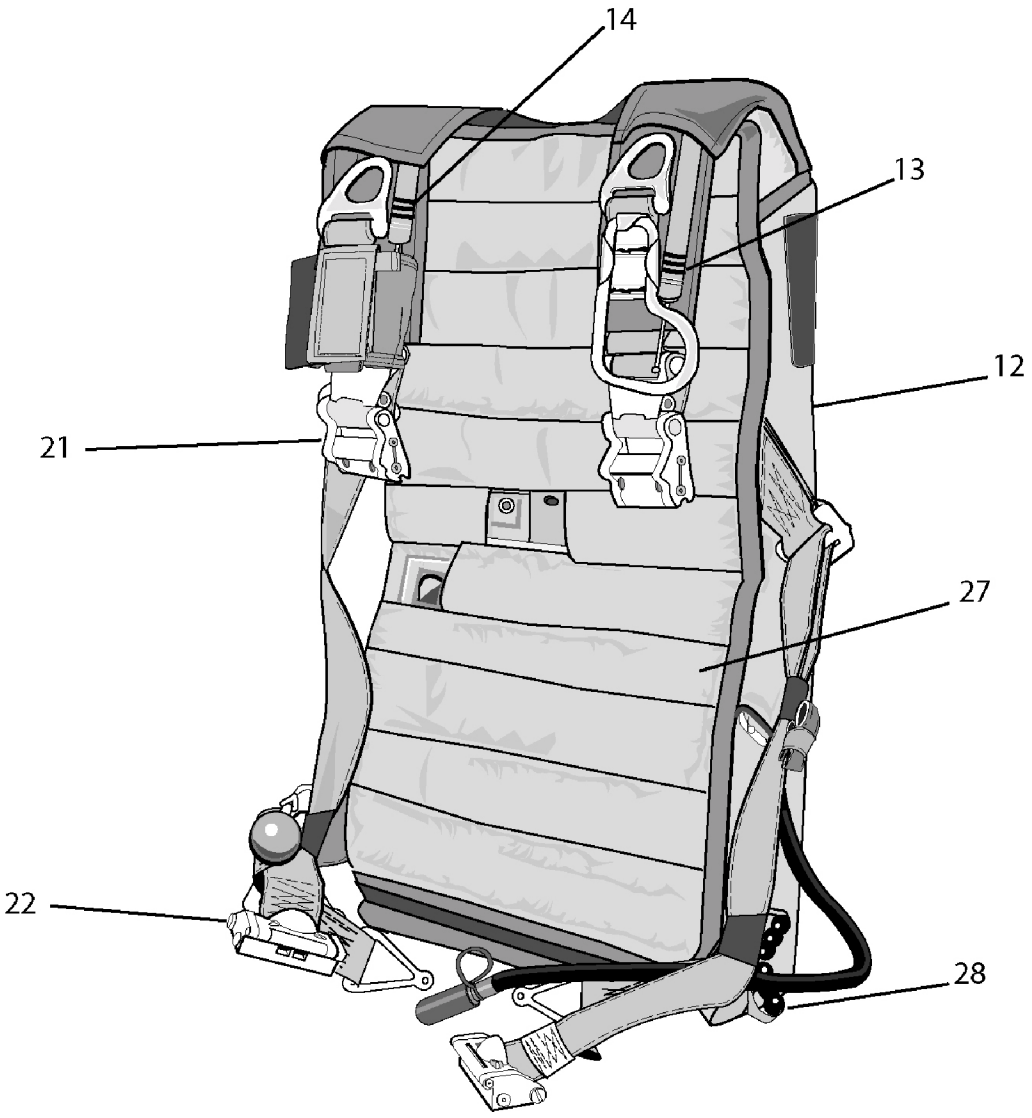


Figure 1. A/P22P-20 Crew Backpack Assembly (Sheet 1 of 9)

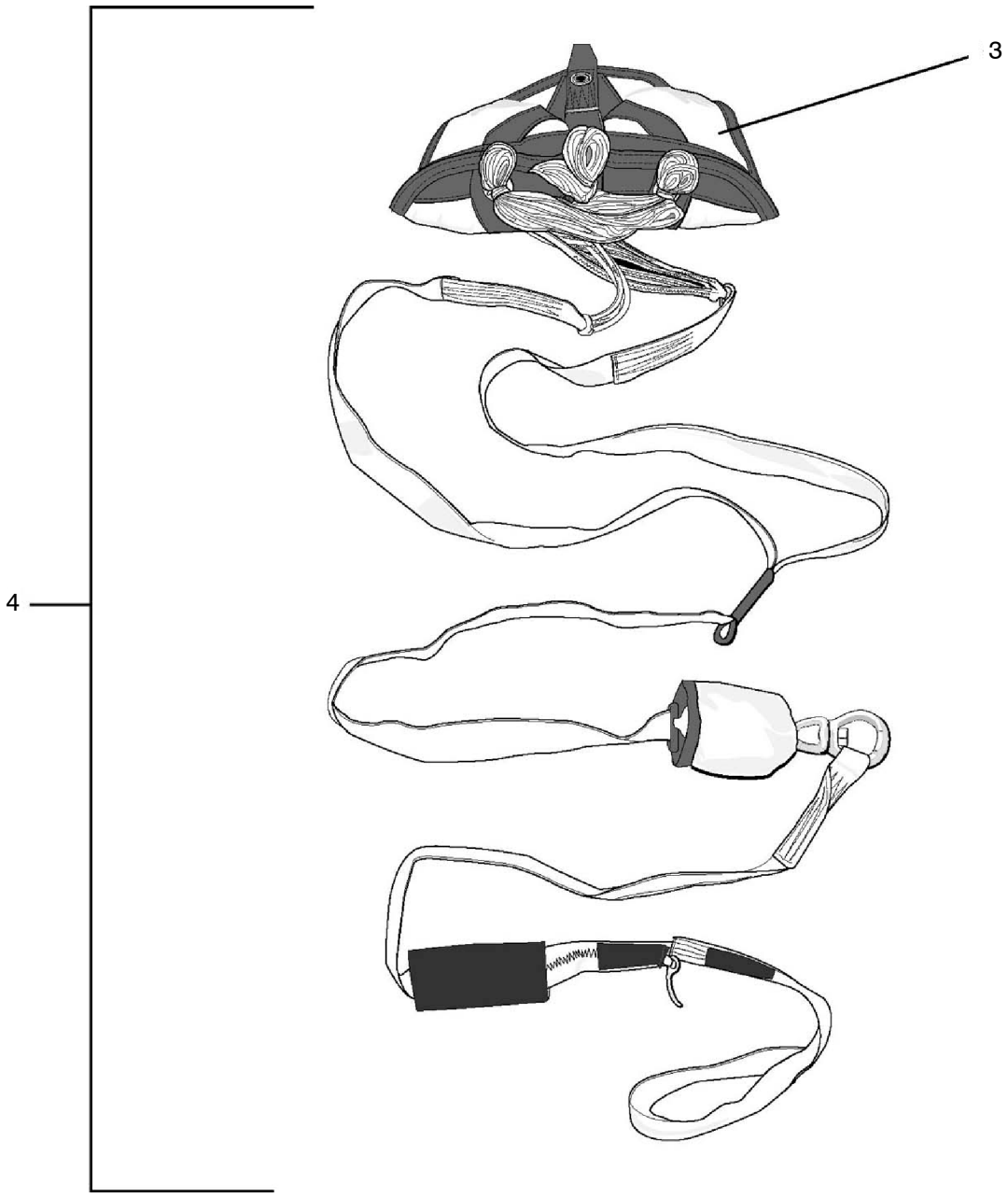


Figure 1. A/P22P-20 Crew Backpack Assembly (Sheet 2 of 9)

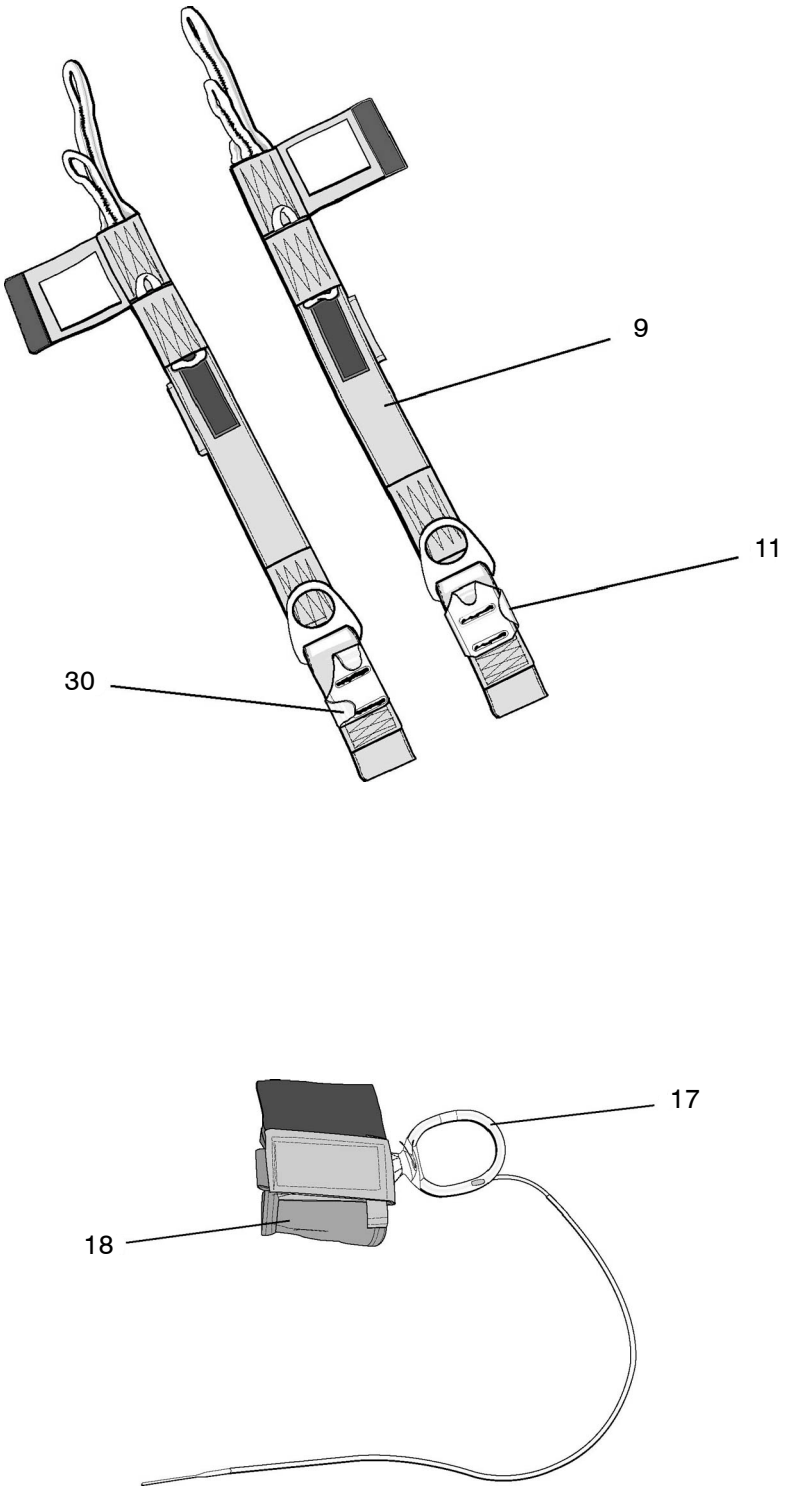


Figure 1. A/P22P-20 Crew Backpack Assembly (Sheet 3 of 9)

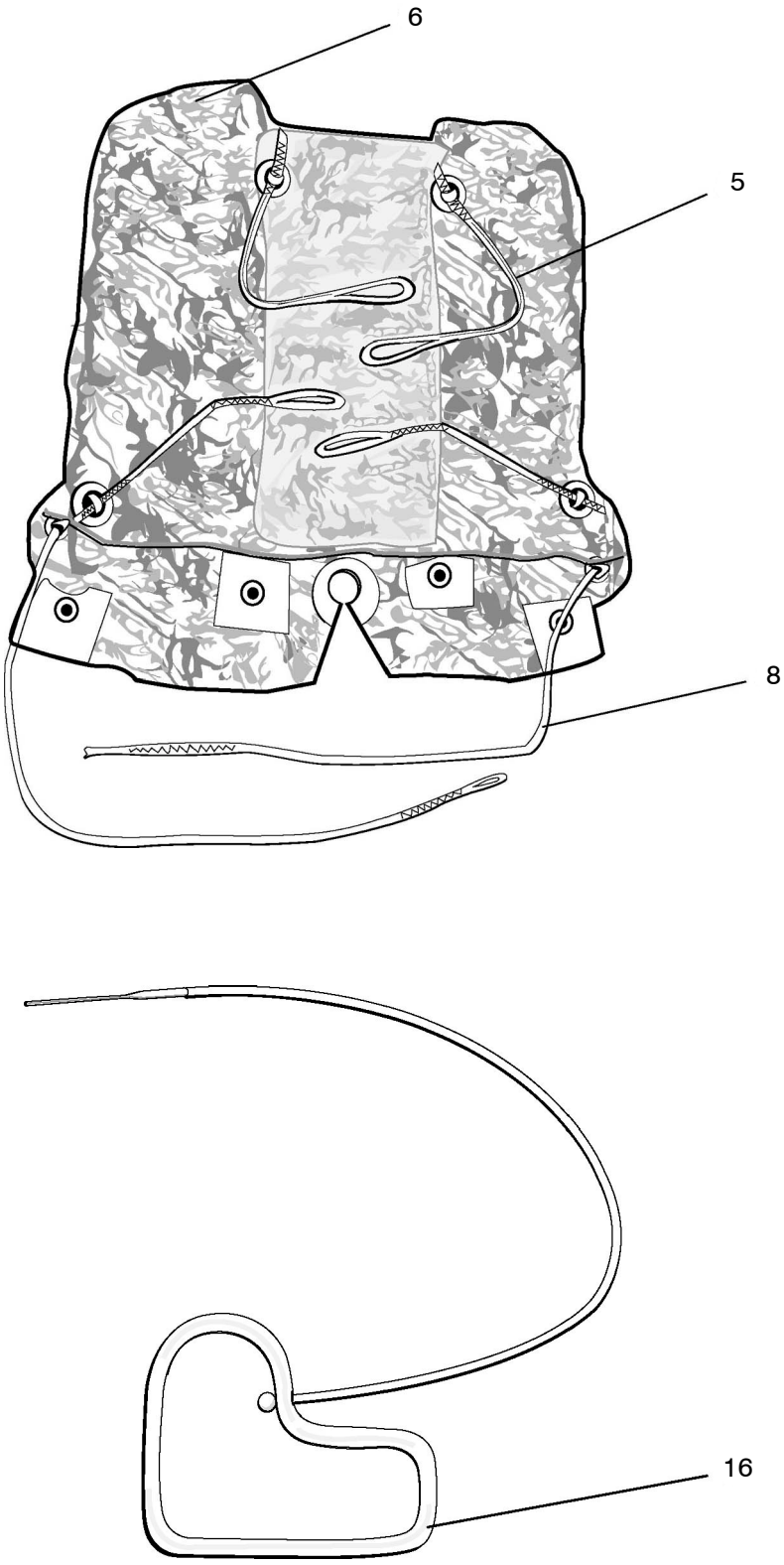


Figure 1. A/P22P-20 Crew Backpack Assembly (Sheet 4 of 9)

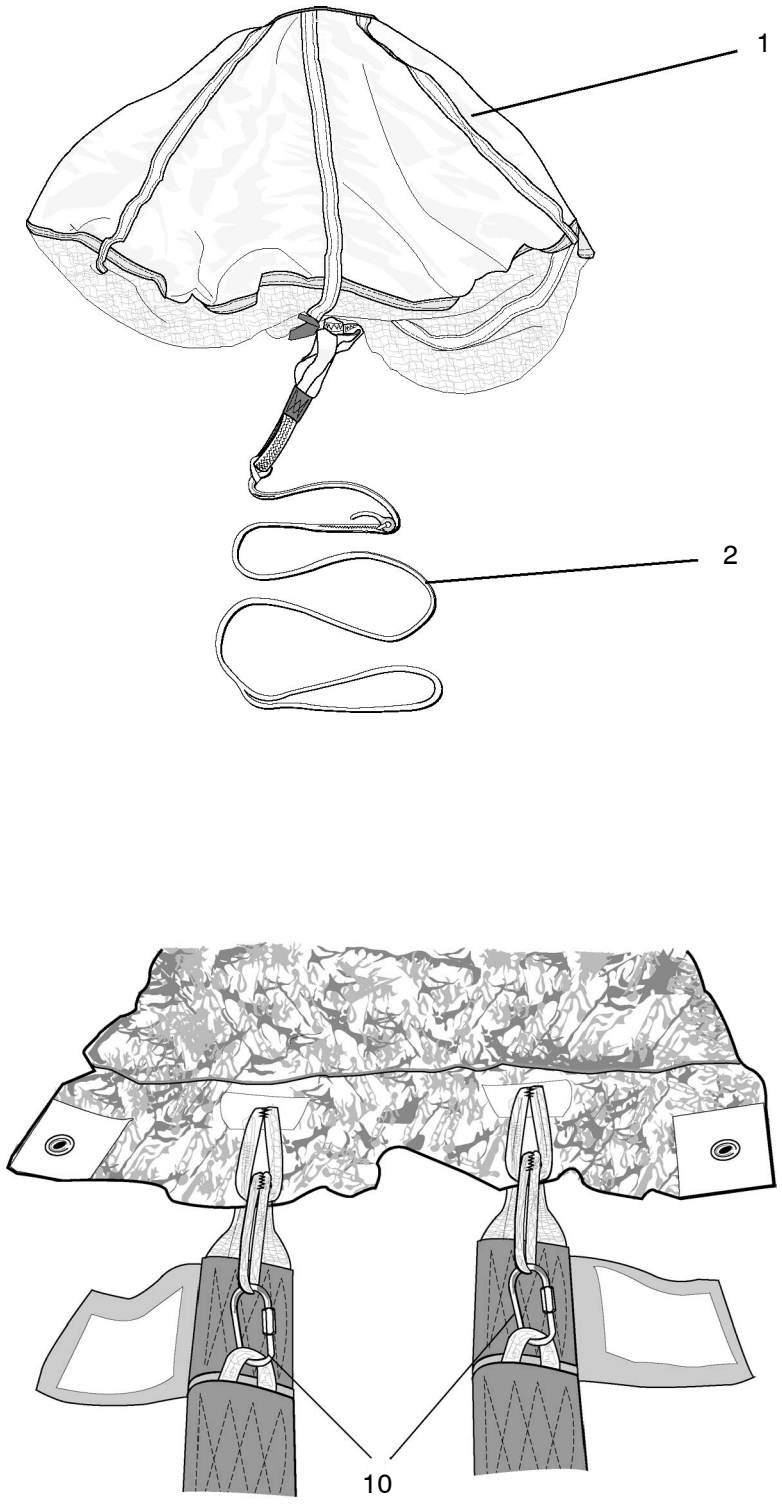


Figure 1. A/P22P-20 Crew Backpack Assembly (Sheet 5 of 9)

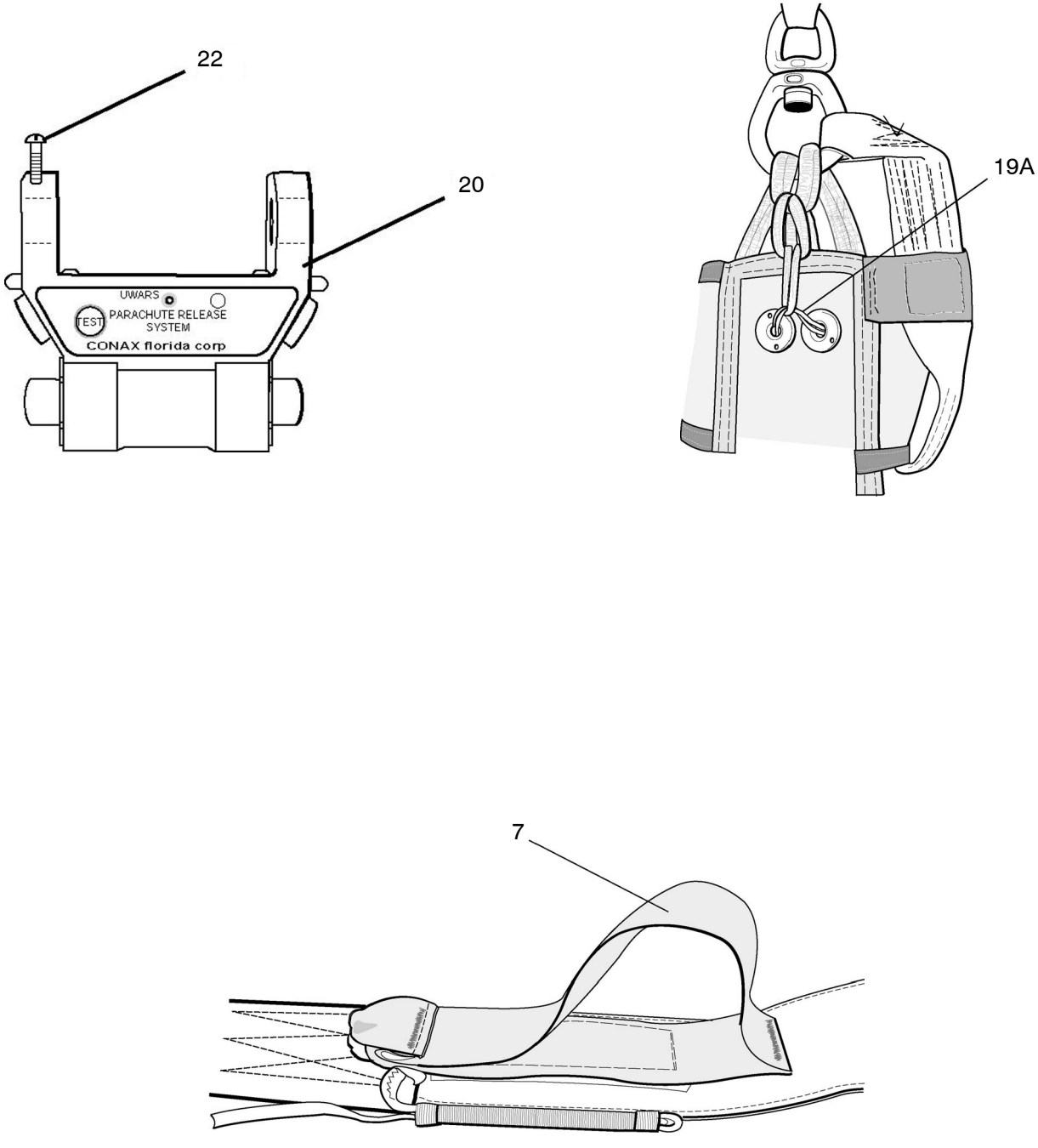
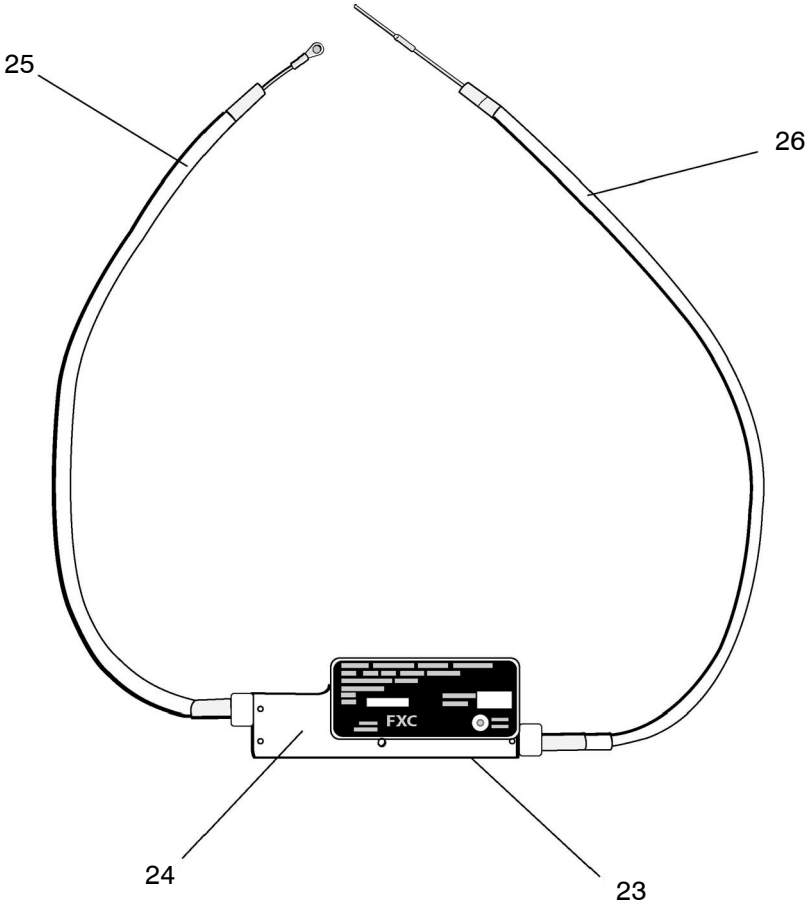


Figure 1. A/P22P-20 Crew Backpack Assembly (Sheet 6 of 9)



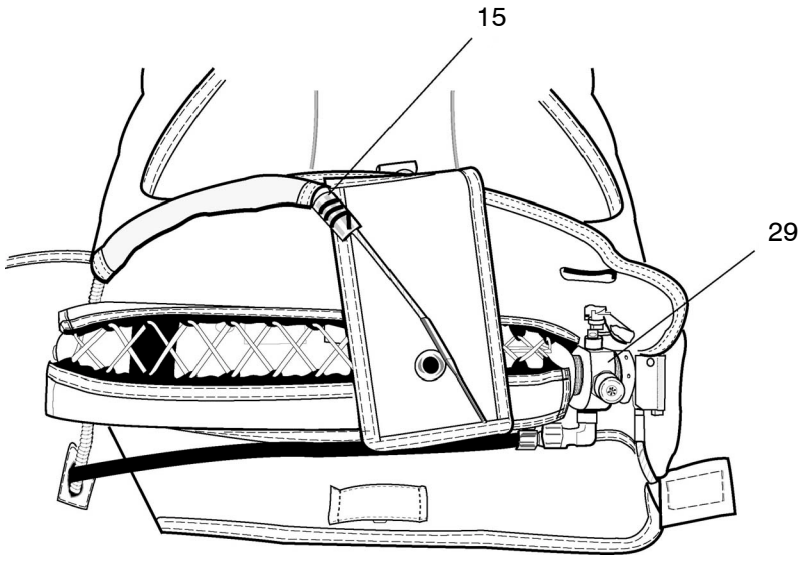


Figure 1. A/P22P-20 Crew Backpack Assembly (Sheet 7 of 9)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SM&R CODE
	3516AS2000-11	CREW BACKPACK ASSEMBLY, A/P22P-20	REF	A	AGOGD
1	3516AS5100-1	. PILOT PARACHUTE ASSEMBLY	1		PAGZZ
2	3516AS5200-1	. PILOT PARACHUTE BRIDLE CORD	1		PAGZZ
3	3516AS6300-1	. . DROGUE DEPLOYMENT BAG	1		PAGZZ
4	3516AS6400-1	. . DROGUE ASSEMBLY	1		PAGZZ
5	3615AS0520-3	. KIT, SEALED CANOPY BRIDLE CORD ..... /SEE NOTE 1/	4		PAGZZ
6	3516AS5000-5	. SEALED CANOPY ASSEMBLY, ... PCU-68/P22P-20	1		PAGDD
7	3516AS5016-1	. STEERING HANDLE	2		PAGZZ
8	3516AS5017-3	. STEERING HANDLE ATTACHMENT CORD	2		PAGZZ
9	3516AS5700-3	. SOFT LINK ASSEMBLY (SET)	1		PAGZZ
10	3615AS6009-1	. . LINK, RAPIDE (SIZE #4)	2		PAGZZ
11	60A116C10-1	. . RIPCORD HANDLE CLIP	1		PAGZZ
12	3516AS3000-11	. HARNESS/CONTAINER ASSEMBLY	1		PAGZZ
13	3516AS6500-11	. RIPCORD HOUSING ASSEMBLY, PRIMARY ...	1		PAGZZ
14	3516AS6500-13	. RIPCORD HOUSING ASSEMBLY, ... MANUAL DROGUE RELEASE	1		PAGZZ
15	3516AS6500-5	. RIPCORD HOUSING ASSEMBLY, ... SURVIVAL KIT RELEASE	1		PAGZZ
16	3516AS8400-3	. RIPCORD ASSEMBLY, PRIMARY	1		PAGZZ
17	3516AS6100-5	. DROGUE RELEASE ASSEMBLY, MANUAL	1		PAGZZ
18	3516AS5810-3	. DROGUE RELEASE HANDLE ..... COVER ASSEMBLY	1		PAGZZ
19	3516AS2010-1	. DROGUE RELEASE LOOP	1		PAGZZ
19A	3516AS2020-9	. SET, CLOSING LOOP /SEE NOTE 2/	1		PAGZZ
20	1814-017-01	. UNIVERSAL WATER ACTIVATED ..... RELEASE SYSTEM (UWARS)	2		PAGZZ
21	990065-1	. CANOPY RELEASE ASSEMBLY	2		PAOZZ
	015-10307-5	. CANOPY RELEASE ASSEMBLY ..... (USE UNTIL EXHAUSTED)	2		PAOZZ
22	122-10935-3	. SET SCREW /SEE NOTE 3/	4		PAGZZ
23	811-00487	. AUTOMATIC ACTUATION DEVICE	1		AGGGG
24	811-00357	. . MODEL 2400 RELEASE BODY	1		PAGZZ
25	811-00458	. . ARMING CABLE ASSEMBLY	1		PAGZZ
26	811-00459	. . POWER CABLE ASSEMBLY	1		PAGZZ
27	3516AS3360-1	. BACK PAD ASSEMBLY	1		PAOZZ
	3516AS2000-33	. OXYGEN RETAINING PAD	1		PAGZZ
28	3516AS6200-1	. SURVIVAL KIT RELEASE ASSEMBLY	1		PAGZZ
29	3516AS5900-5	. EMERGENCY O2 SYSTEM (ASSEMBLY ..... WITH SUPPORT BREAKDOWN IN NAVAIR 13-1-6.4-1)	1		PAGGG

Figure 1. A/P22P-20 Crew Backpack Assembly (Sheet 8 of 9)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SM&R CODE
30	3516AS6120-31	. MANUAL OVERRIDE RELEASE HANDLE CLIP	1		PAGZZ
31	990060-1	. . RELEASE ASSEMBLY, LAP BELT	2		PAOZZ

NOTE 1: 3615AS0520-3 CONSISTS OF A KIT OF FOUR SEALED CANOPY BRIDLE CORDS.

NOTE 2: 3516AS2020-9 CONSISTS OF THE FOLLOWING (4) CLOSING LOOPS: 4 1/2-IN. FINAL CLOSING LOOP, 3 1/2-IN. SURVIVAL KIT CLOSING LOOP, 3/4-IN. DROGUE ATTACHMENT LOOP, AND THE 1/2-IN. INSIDE FLAP CLOSING LOOP.

NOTE 3: 122-10935-3 (2) UTILIZED FOR UWARS (2) UTILIZED ON LOWER CANOPY RELEASE ASSEMBLIES.

Figure 1. A/P22P-20 Crew Backpack Assembly (Sheet 9 of 9)